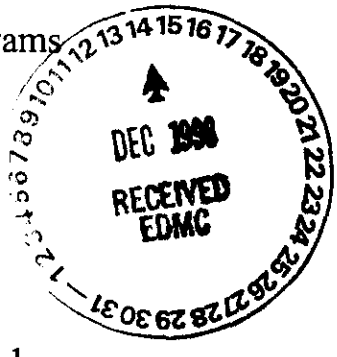
BNFL Inc.

Document title: **Notice of Intent to File TWRS-P Facility Dangerous Waste Permit Application**



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History Sheet

Rev	Date	Reason for revision	Revised by
0		Initial issue	
1	11/23/98	Incorporate DOE comments	Kami L. Barry

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APPENDICES

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FIGURES

Acronyms

CFR	*Code of Federal Regulations*
DOE	U.S. Department of Energy
DOE-RL	U.S. Department of Energy, Richland Operations Office
DST	Double-Shell Tank
Ecology	Washington State Department of Ecology
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ETF	Effluent Treatment Facility
HLW	high-level waste
IHLW	immobilized high-level waste
ILAW	immobilized low-activity waste
LAW	low-activity waste
NEPA	*National Environmental Policy Act of 1969*
NOI	Notice of Intent
RCRA	*Resource Conservation and Recovery Act of 1976*
RCW	*Revised Code of Washington*
SEPA	*State (of Washington) Environmental Policy Act of 1971*
SST	Single-Shell Tank
TEDF	Treated Effluent Disposal Facility
Tri-Party Agreement	*Hanford Federal Facility Agreement and Consent Order*
TRU	transuranics
TSD	treatment, storage, and/or disposal
TWRS	Tank Waste Remediation System
TWRS-P	Tank Waste Remediation System-Privatization
WAC	*Washington Administrative Code*

1. Introduction

The Washington State Department of Ecology (Ecology) "Dangerous Waste Regulations," *Washington Administrative Code* (WAC) 173-303-281 require that dangerous waste facility owners and/or operators submit a Notice of Intent before submitting a permit application for new or expanded dangerous waste treatment, storage, and/or disposal (TSD) units. This Notice of Intent is being filed to notify Ecology, local governmental agencies, and the general public that BNFL Inc. and the U.S. Department of Energy, Richland Operations Office (DOE-RL) intend to submit a permit application for a TSD unit to be constructed as an expansion of the U.S. Department of Energy (DOE) Hanford *Resource Conservation and Recovery Act of 1976* (RCRA) Facility.

The new TSD unit is proposed for treating mixed waste currently stored in tank systems at the Hanford Site. The construction and operation of the new TSD unit will be undertaken as part of DOE's Tank Waste Remediation System-Privatization (TWRS-P) effort. The dangerous waste permit application will be filed by DOE-RL as owner and by BNFL Inc. as owner and operator of the unit. The BNFL Inc. TWRS-P Facility is a unit of the Hanford RCRA Facility. The proposed TSD unit is hereinafter referred to as the BNFL Inc. TWRS-P Facility. DOE-RL and BNFL Inc. will also submit a dangerous waste permit application for the BNFL Inc. TWRS-P Facility. Although the closure plan will be included in the dangerous waste permit application, it is anticipated that DOE-RL will perform this activity.

BNFL Inc. and DOE-RL intend to construct a facility for treatment and storage of mixed waste within the 200 East Area of the Hanford Site, which is located near Richland, Washington. This new facility is needed to support environmental cleanup efforts at the Hanford Site. The BNFL Inc. TWRS-P Facility will be used to pre-treat and process mixed waste into a durable glass form that is suitable for long-term storage or disposal.

The mixed waste to be processed by the BNFL Inc. TWRS-P Facility is currently stored in the tank systems at the Hanford Site, which are referred to as the Double-Shell Tank (DST) System and the Single-Shell Tank (SST) System. The design of the treatment and storage systems within the BNFL Inc. TWRS-P Facility will ensure compliance with the requirements of WAC 173-303 and the RCRA, as amended.

This Notice of Intent only covers the BNFL Inc. TWRS-P Facility and not the DST and SST Systems. All waste from the SST System will be transferred to the DST System by DOE before being transferred to the BNFL Inc. TWRS-P Facility. Underground pipelines will be located in the transfer feed line corridor (see BNFL Inc. TWRS-P Facility Topographic Map in Appendix A) to transfer the waste from the DST System to the BNFL Inc. TWRS-P Facility.

1.1. Owner and Operator Information [WAC 173-303-281(3)(a)(i)]

This section provides owner and the operator information for the BNFL Inc. TWRS-P Facility. Information is also provided for the primary contact persons, as required under WAC 173-303-281, "Notice of Intent."

Owner: U.S. Department of Energy, Richland Operations Office

Manager, Richland Operations Office: Mr. John D. Wagoner

Address: U.S. Department of Energy
Richland Operations Office
Post Office Box 550
Richland, Washington 99352

Telephone: (509) 372-7395

Owner/Operator: BNFL Incorporated

General Manager, BNFL Inc.: Mr. Maurice J. Bullock

Address: BNFL Inc.
2940 George Washington Way
Richland, WA 99352

Telephone: (509) 371-3100

2. Facility Description and General Provisions

The Hanford Facility is a single RCRA/dangerous waste management facility identified by the U.S. Environmental Protection Agency (EPA)/State Identification Number WA 7890008967. The Hanford Facility consists of over 60 TSD units conducting a variety of dangerous waste management activities. These TSD units are included in the *Hanford Facility Dangerous Waste Part A Permit Application* (DOE-RL 1988). The Hanford Facility consists of all contiguous land, structures, other appurtenances, and improvements on the land used for recycling, reusing, reclaiming, transferring, storing, treating, or disposing of dangerous waste, which, for the purposes of the RCRA, are owned by the U.S. Government (excluding lands north and east of the

Columbia River, river islands, lands owned or used by the Bonneville Power Administration, lands leased or under lease obligation to the Washington Public Power Supply System, and lands owned by or leased to the state of Washington).

The following sections provide a description of the BNFL Inc. TWRS-P Facility, a unit within the Hanford Facility, as well as other general provisions specified in WAC 173-303-281.

2.1. Location of Proposed Construction [WAC 173-303-281(3)(a)(ii)]

The BNFL Inc. TWRS-P Facility will be located in the 200 East Area of the Hanford Site, Benton County, Washington. The new facility will be used for treatment and greater-than-90-day storage of dangerous mixed waste. No land-based unit types [as defined in WAC 173-303-282(3)(h)] will be used in the BNFL Inc. TWRS-P Facility.

A small-scale map depicting the Hanford Site and the location of the BNFL Inc. TWRS-P Facility is provided in Figure 1. Appendix A contains a large-scale topographic map identifying the following:

- Integrated Site Plan showing the proposed location for the BNFL Inc. TWRS-P Facility and a wind rose for the 200 East Area.

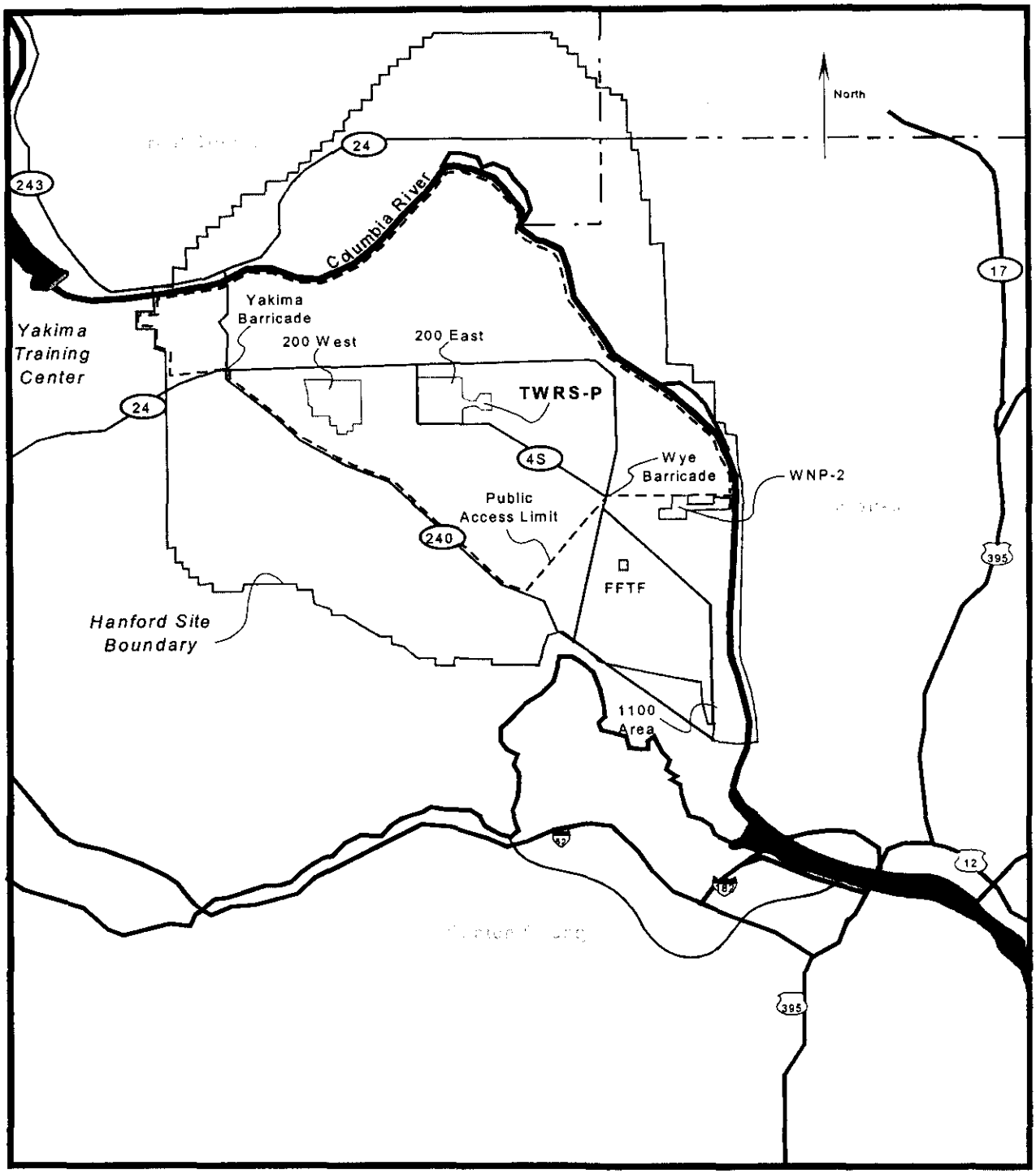
- Hatched area on the topographic map indicating the potential increase in acreage required by BNFL Inc.

The BNFL Inc. TWRS-P Facility waste management area is comprised of three process buildings, connecting pipelines, and connecting offgas and ventilation ductwork.

2.2. Types and Amount of Waste to Be Managed Annually [WAC 173-303-281(3)(a)(iii)]

The BNFL Inc. TWRS-P Facility is proposed as a dedicated waste treatment facility that will receive a mixed waste stream from the DST System. Waste from the SST System has been, and will continue to be, transferred to the DST System. The waste will contain organic, inorganic, and radionuclide constituents. The waste is characterized as a high pH solution of inorganic salts and radionuclides containing low concentrations of metals and organic constituents. The RCRA waste codes potentially applicable to the waste are listed in the Double-Shell Tank, Part A Permit Application (DOE-RL 1988), which was previously submitted by DOE-RL to Ecology. The BNFL Inc. TWRS-P Facility will provide capabilities for treatment of low-activity waste (LAW) and high-level waste (HLW).

Figure 1: Hanford Site and Location of BNFL Inc. TWRS-P Facility



The waste managed in the LAW treatment process primarily will be the liquid supernatant portion of LAW, with less than 2 weight% entrained solids, stored in the DST System at the Hanford Site. The HLW treatment process allows for the additional treatment of a HLW stream with a higher solids content. The estimated amounts of mixed waste to be treated by the proposed facility, based on maximum design capacity, is 530,000 ft^3/year (assuming sodium at 5-molar concentration). The BNFL Inc. TWRS-P Facility will produce approximately 159,000 ft^3 of immobilized low-activity waste (ILAW) and 7,800 ft^3 of immobilized high-level waste (IHLW) per year. Future enhancements to the BNFL Inc. TWRS-P Facility could increase the amount of waste feed processed annually.

2.3. Description of Waste Management Equipment and Activities [WAC 173-303-281(3)(a)(iv)]

BNFL Inc. has contracted with DOE to design a treatment facility for treating HLW in conjunction with LAW. The BNFL Inc. TWRS-P Facility will be located in the 200 East Area of the Hanford Site. The BNFL Inc. TWRS-P Facility will be a dedicated treatment facility for storage and treatment of mixed waste transferred from the DST System at the Hanford Site. The ILAW and IHLW products will be placed in appropriately designed containers that are temporarily stored onsite and transferred to appropriately permitted storage/disposal facilities. DOE is responsible for the long-term storage or disposal of the ILAW and IHLW after processing is completed. Figure 2 provides a preliminary general building layout for the BNFL Inc. TWRS-P Facility. Figure 3 provides a general process flow diagram.

The LAW pretreatment process will generate several mixed waste streams, termed "intermediate waste," that require management within the BNFL Inc. TWRS-P Facility. The intermediate waste arising from the LAW feed stream will result from the separation of cesium, technetium, entrained solids, and strontium/transuranics (TRU). The separated entrained solids stream may be returned to the DST System as a slurry or treated in the HLW treatment process. The other intermediate waste streams removed from the LAW feed will be combined with the HLW feed stream for immobilization in the HLW melter process. Nonradioactive dangerous waste and nonradioactive, nondangerous solid waste will be disposed of offsite using commercial services.

The LAW waste liquid (after removal of cesium, strontium, technetium, TRU, and entrained solids) will be concentrated, blended with glass-forming materials (e.g., silica sand and metal oxides), and vitrified in the LAW melter process. The final waste product resulting from the LAW melter treatment process will be an ILAW glass monolith. Air emissions from the melter will be treated in an offgas treatment system designed to meet EPA, Washington State Department of Health, and Ecology standards.

The HLW pretreatment process involves waste dewatering and/or solubilizing of nonradioactive components, depending upon the characteristics of the waste feed stream. The HLW is then blended with glass-forming materials (e.g., silica sand and metal oxides) and intermediate waste (removed by the LAW pretreatment process) before being fed to the HLW melter. The final waste product resulting from the HLW melter treatment process will be an IHLW glass monolith.

Air emissions from the melter will be treated in an offgas treatment system designed to meet EPA, Washington State Department of Health, and Ecology standards.

Depending upon waste characteristics, the BNFL Inc. TWRS-P Facility will also transfer evaporator condensate, equipment drain liquids, floor drain liquids, and decontamination wash liquids to other Hanford Site facilities, such as the Effluent Treatment Facility (ETF), or the Treated Effluent Disposal Facility (TEDF). These waste streams will meet the waste acceptance criteria for the applicable receiving facility. Each type of mixed waste treatment and storage unit is described in further detail in the following sections.

Figure 2: General Building Layout.

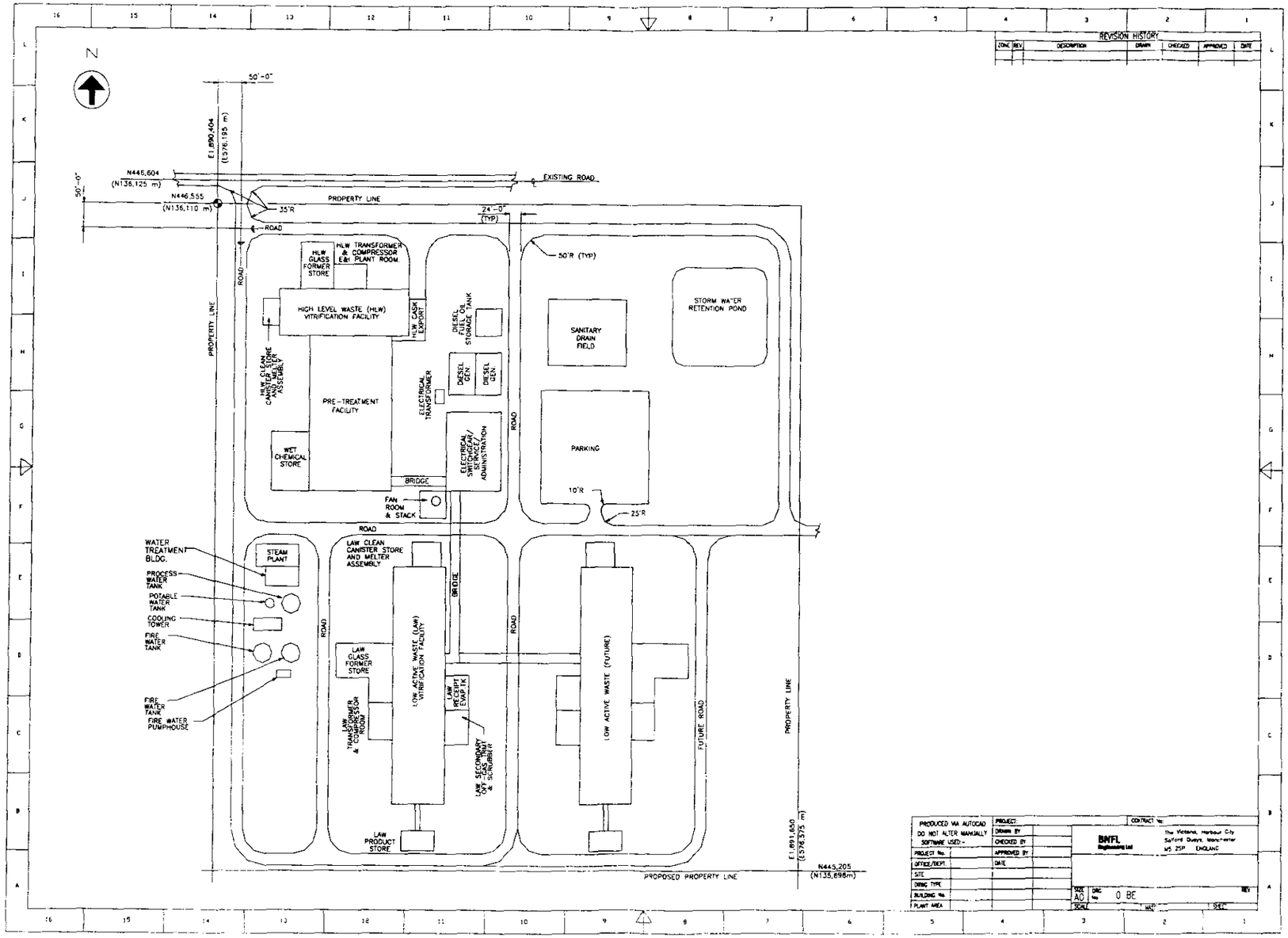
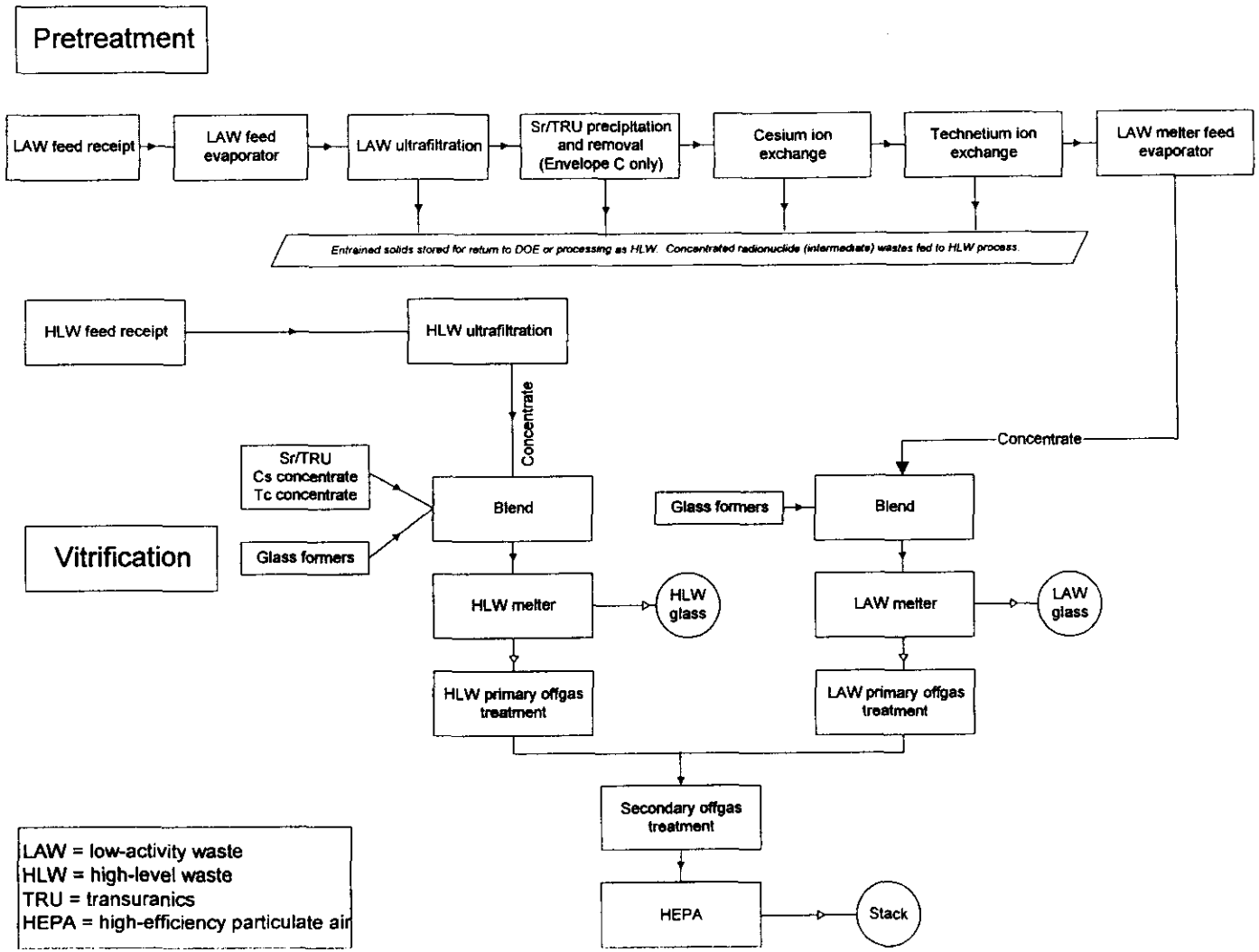


Figure 3: Simplified TWRS-P Process Flow Diagram



2.3.1. Container Storage

Mixed waste container storage areas will be used for storing containers of ILAW and IHLW glass waste and other dangerous waste. A separate container storage area will be used for the nonradioactive, dangerous waste, if required.

2.3.2. Tank System Storage

Tank systems will be used to store mixed waste within the BNFL Inc. TWRS-P Facility. The tank systems will be as follows:

- Two tank systems will be used for receipt of the HLW and LAW.
- A tank system will be used for storage of the separated entrained solids slurry while the material is sampled and either adjusted to DST specifications and metered back to the DST System or fed to the HLW treatment process.
- Waste storage tanks will contain the cesium and technetium liquid mixed waste awaiting blending with HLW.
- A strontium/TRU waste storage tank will contain strontium/TRU liquid mixed waste awaiting blending with HLW.
- A tank system will be used to store evaporator condensate, floor drain waste, decontamination waste liquid, and equipment drains. These liquid effluents will be discharged to the ETF or TEDF, depending upon the waste characteristics.
- Tank systems will feed the HLW melter and the LAW melter.

2.3.3. Containment Building Storage

Several rooms in the BNFL Inc. TWRS-P Facility will be dedicated to the short-term storage and packaging of failed LAW and HLW melters. These containment building units will be used for storage and packaging of failed melters. There will be two containment building units: one unit will be used for the LAW melters and one unit will be used for the HLW melter.

2.3.4. Tank System Treatment

Several different tank system treatment operations will be used in the BNFL Inc. TWRS-P Facility processes. The following processes will be used for pretreating the LAW and HLW:

- Waste feed concentration by evaporation (LAW) or ultrafiltration (HLW)
- Entrained solids separation and concentration by ultrafiltration (LAW)
- Cesium removal and concentration by ion exchange (LAW)
- Technetium removal and concentration by ion exchange (LAW)

- Strontium/TRU removal and concentration by precipitation and ultrafiltration (LAW)
- Preparation for vitrification by adding glass-former materials (LAW and HLW).

2.3.5. Miscellaneous Unit Treatment

The vitrification process to immobilize the pretreated waste will occur in two separate melter operations (LAW and HLW) within the BNFL Inc. TWRS-P Facility. Both melters will be permitted as miscellaneous treatment units.

2.4. Compliance with National and State Environmental Policy Acts

The *National Environmental Policy Act of 1969* (NEPA) and *State of Washington Environmental Policy Act of 1971* (SEPA) provide decision makers with an analysis of environmental impacts of proposed actions for consideration during decision making. The alternatives for treatment and disposal of the mixed waste currently stored at the Tank Waste Remediation System (TWRS) in 177 underground storage tanks are subject to the NEPA and SEPA requirements. WAC 197-11-610 addresses the use of NEPA documents as follows:

> "(3) An agency may adopt a NEPA EIS as a substitute for preparing a SEPA EIS if (a) the requirements of WAC 197-11-600 and 197-11-630 are met (in which case the procedures in Parts Three through Five of these rules for preparing an EIS shall not apply); and (b) The federal EIS is not found inadequate: (i) By a court; (ii) by the Council on Environmental Quality (CEQ) (or is at issue in a predecision referral to CEQ) under the NEPA regulations; or (iii) by the administrator of the United States Environmental Protection Agency under section 309 of the Clean Air Act, 42 U.S.C. 1857."

The TWRS Environmental Impact Statement (EIS) (DOE1996a) was released in August 1996 and the Record of Decision was published in the *Federal Register* on February 26, 1997. The TWRS EIS satisfies both the NEPA and SEPA requirement as stated above.

The TWRS EIS states that, "This document analyzes the potential environmental consequences related to the Hanford Site TWRS alternatives for management and disposal of radioactive, hazardous, and mixed waste . . ." DOE-RL made the determination that the scope of work to be performed by BNFL Inc. regarding the vitrification of TWRS waste is within the bounds of the TWRS EIS (DOE 1996a) and the *Supplemental Analysis for the Tank Waste Remediation System* (DOE 1998). Although the BNFL Inc. approach is in compliance with the NEPA and SEPA requirements through the TWRS EIS, a specific SEPA checklist for the BNFL Inc. TWRS-P Facility is provided in Appendix C. This SEPA checklist was compiled using a combination of other Hanford Site checklists and BNFL Inc. specific information.

2.5. Compliance with Siting Standards [WAC 173-303-281(3)(a)(v)]

Demonstration of compliance with the applicable siting criteria required under WAC 173-303-282(6) and (7) is addressed in the following sections.

2.5.1. Criteria for Elements of the Natural Environment [WAC 173-303-282(6)]

The following sections describe the protective measures and/or siting characteristics that provide protection of the natural environment near the BNFL Inc. TWRS-P Facility. Each element of the criteria identified in WAC 173-303-282(6) is addressed in the order they appear in the regulation.

2.5.1.1. Earth

This section addresses the potential for the release of mixed waste into the environment due to structural damage resulting from natural hazards at the BNFL Inc. TWRS-P Facility location.

Seismic Risk. As discussed in the *Hanford Facility Dangerous Waste Permit Application, General Information Portion* (DOE-RL 1997), the BNFL Inc. TWRS-P Facility will be located in seismic risk Zone 2B, as classified in the *Uniform Building Code* (ICBO 1997). The BNFL Inc. TWRS-P Facility design will be constructed to meet applicable safety standards that meet or exceed the applicable seismic design requirements identified in the *Uniform Building Code* (ICBO 1997).

No active fault or evidence of a fault with displacement during Holocene times has been found at the Hanford Site (DOE 1988; WHC 1991). The youngest faults recognized at the Hanford Site occur on Gable Mountain, over 7.5 mi northeast of the 200 East Area. These faults are from the Quaternary Period and are considered capable.

Subsidence. The proposed BNFL Inc. TWRS-P Facility site is located in the 200 East Area of the Hanford Site. This area of the Hanford Site is not considered to be an area subject to subsidence (PNNL 1997a).

Slope or Soil Instability. The proposed BNFL Inc. TWRS-P Facility site is not located in an area of slope or soil instability or in an area affected by unstable slope or soil conditions (PNNL 1997a).

2.5.1.2. Air

The 200 East Area is not located in a Class I Prevention of Significant Deterioration air quality zone or nonattainment area. No incineration units will be used in the BNFL Inc. TWRS-P Facility. The facility will use miscellaneous thermal treatment units to melt, capture, and immobilize waste constituents in a glass matrix. Air emissions from the melters will be treated in an offgas treatment system designed to meet applicable EPA, Washington State Department of Health, and Ecology standards. Two standby diesel generators will provide emergency power to the BNFL Inc. TWRS-P Facility. Three boilers will provide steam to the BNFL Inc. TWRS-P

Facility. Emissions from these units will be treated in commercially available treatment systems designed to meet applicable standards.

2.5.1.3. Water

This section addresses the potential for contaminating waters of the state in the event of a release of mixed waste. The following sections address considerations for the protection of surface water and groundwater.

Flood, Seiche, and Tsunami Protection. Three sources of potential flooding of the Hanford Site have been considered in the *Hanford Facility Dangerous Waste Permit Application, General Information Portion* (DOE-RL 1997): (1) the Columbia River, (2) the Yakima River, and (3) storm-induced run-off in ephemeral streams draining the Hanford Site (i.e., Cold Creek). No perennial streams occur in the central part of the Hanford Site (near the 200 East Area).

Figure 4 was obtained from the *Hanford Facility Dangerous Waste Permit Application, General Information Portion* (DOE-RL 1997) and contains information on the estimated maximum flood for the Columbia River, the Yakima River, and Cold Creek. The BNFL Inc. TWRS-P Facility will not be within the probable maximum flood for the Columbia River, Yakima River, or Cold Creek and, therefore, will not be within the respective 100- or 500-year floodplain.

Perennial Surface Water Bodies. The BNFL Inc. TWRS-P Facility will be a non-land-based facility [as defined in WAC 173-303-282(3)(i)]. Non-land-based facilities must be located at least 500 ft from any perennial water body. The BNFL Inc. TWRS-P Facility will be located approximately 6 mi from the Columbia River, which is the closest perennial water body.

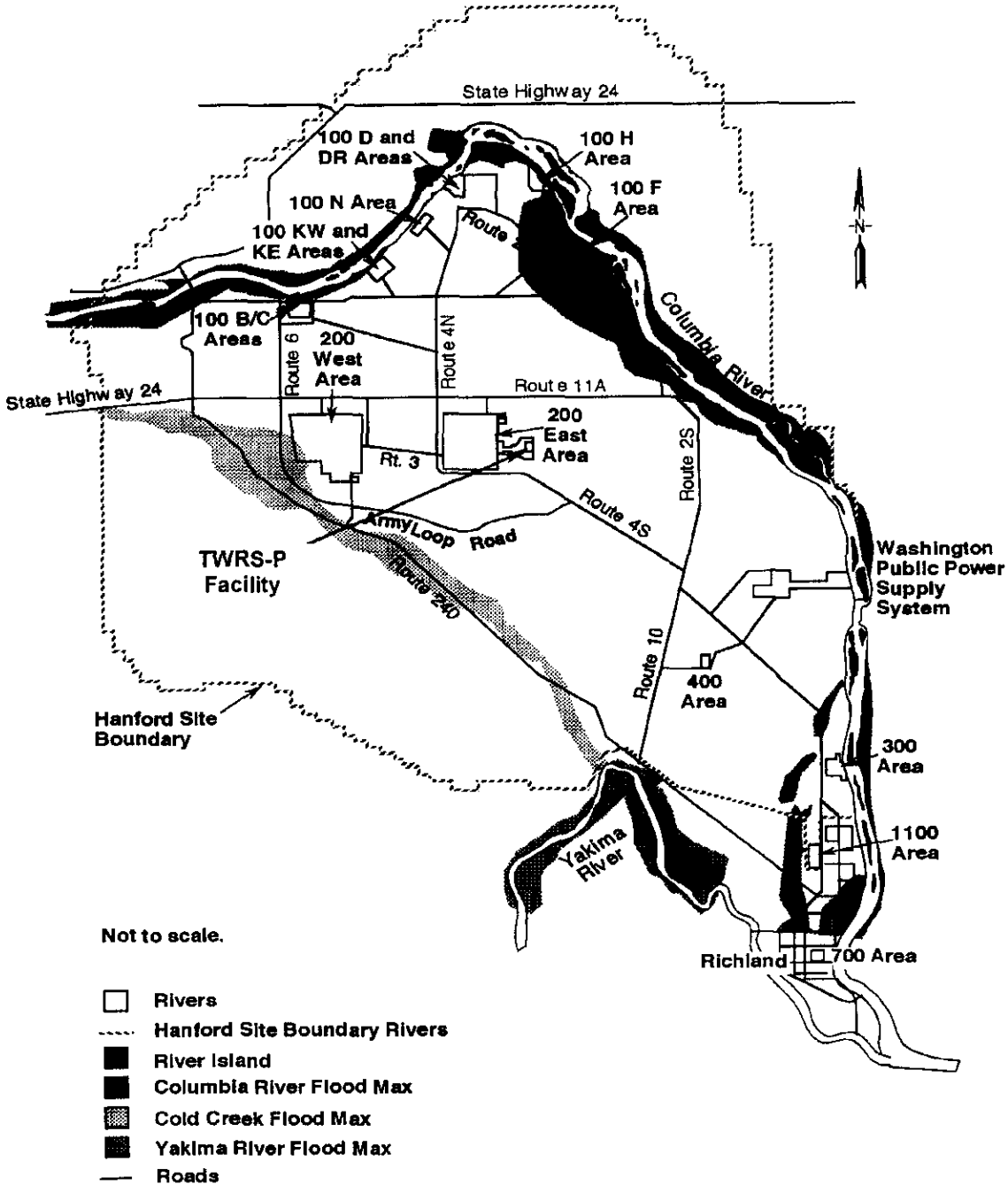
Surface Water Supply. The BNFL Inc. TWRS-P Facility will not be located in a watershed identified in the report submitted to and approved by the Washington State Department of Health under the authority of WAC 248-54-225(3), "Watershed Control." The BNFL Inc. TWRS-P Facility will not be within 0.25 mi of a surface water intake for domestic water.

Groundwater. The BNFL Inc. TWRS-P Facility will be a non-land-based facility [as defined in WAC 173-303-282(3)(i)]; therefore, compliance with the contingent groundwater protection program [WAC 173-303-806(4)(a)(xxi)] is not required.

Depth to Groundwater. The BNFL Inc. TWRS-P Facility will be located in the 200 East Area of the Hanford Site. The depth to groundwater in the 200 East Area varies from approximately 213 to 328 ft according to the *Hanford Site Groundwater Monitoring for Fiscal Year 1996* (PNNL 1997b).

Because the lowest point of the BNFL Inc. TWRS-P Facility waste management units will be approximately 46 ft below ground surface, the distance from the lowest waste management unit to the seasonal high water level of the uppermost aquifer will be far greater than the required 10 ft.

Figure 4: Probable Maximum Flood



Sole Source Aquifer. The BNFL Inc. TWRS-P Facility will not be a land-based facility [as defined in WAC 173-303-282(3)(h)] and will not be located over an area designated as a "sole source aquifer" under section 1424(e) of the *Safe Drinking Water Act of 1974.*

Groundwater Management Areas and Special Protection Areas. The proposed BNFL Inc. TWRS-P Facility location is not within a groundwater management or special protection area pursuant to *Revised Code of Washington* (RCW) 90.44.130.

Groundwater Intakes. The BNFL Inc. TWRS-P Facility will not be located within 500 ft of any groundwater intake for a domestic water supply.

2.5.1.4. Plants and Animals

The Hanford Site is located within a shrub-steppe vegetational zone characterized by the presence of sagebrush and bunchgrass. The primary biological impact will be the loss of shrub-steppe habitat dominated by mature sagebrush during the construction of the BNFL Inc. TWRS-P Facility and its infrastructure. Shrub-steppe habitat is classified as a priority habitat by the Washington State Department of Fish and Wildlife and, as such, is a Level III biological resource (e.g., because of state listing; potential for Federal or state listing; unique or significant value for plant, fish, or wildlife species; or special administrative designation) according to the Hanford Site Draft Biological Resources Management Plan (DOE-RL 1996).

The BNFL Inc. TWRS-P Facility will be located on the Central Plateau on the southeastern portion of the 200 East Area, which is covered by the TWRS EIS (DOE 1996a). No federally listed threatened or endangered plant or animal species occur on or around the vicinity of the Central Plateau of the Hanford Site. Only the state-listed ferruginous hawk is likely to use the upland shrub-steppe habitat of the 200 Areas. Although ferruginous hawks have been seen in the general area on occasion, ferruginous hawks have not been observed to use the habitat in the vicinity of the BNFL Inc. TWRS-P Facility for perching, hunting, or nesting. Additional information is provided in Volume I of the TWRS EIS, Section 4.4.5 (DOE 1996a). The loggerhead shrike (*Lanius ludovicianus*) and the sage sparrow (*Amphispiza belli*), two Washington State Candidate bird species, were observed in the vicinity during the performance of a biological review of the proposed site of the BNFL Inc. TWRS-P Facility (PNNL 1998a).

In addition, no designated critical habitat, wetlands, natural area preserves (per RCW 79.70), bald eagle protection areas, state or federally designated wildlife refuges or preserves are located within 500 ft of the proposed BNFL Inc. TWRS-P Facility. However, several bird species of concern protected by Washington State are likely to be found in the project area. Typical shrub nesters include the sage sparrow (*Amphispiza belli*) and loggerhead shrike (*Lanius ludovicianus*). Typical ground nesters include the burrowing owl (*Athene cunicularia*), horned lark (*Eremophilia alpestris*), western meadowlark (*Sturnella neglecta*), and savannah sparrow (*passerculus sandwichensis*).

2.5.1.5. Precipitation

The BNFL Inc. TWRS-P Facility will not be located in an area with a mean annual precipitation level greater than 100 in. (DOE 1987).

2.5.2. Criteria for Elements of the Built Environment [WAC 173-303-282(7)]

The following sections address the locational factors affecting protection of the built environment. Each element of the criteria for non-land-based facilities or units identified in WAC 173-303-282(7) is addressed.

2.5.2.1. Adjacent Land Use

The setback for adjacent land use must be greater than 200 ft from the nearest point of the facility property line. The BNFL Inc. TWRS-P Facility will be located approximately 8.5 mi from the closest Hanford Site property line.

2.5.2.2. Special Land Uses

This section addresses setback criteria for special land uses that may be present in the vicinity of the proposed BNFL Inc. TWRS-P Facility.

Wild and Scenic Rivers. The BNFL Inc. TWRS-P Facility will be located in the 200 East Area, approximately 6 mi from the Columbia River, which has been proposed as a Wild and Scenic River area. The BNFL Inc. TWRS-P Facility will not be located within the viewshed of users of the Columbia River.

Parks, Recreation Areas, and National Monuments. The BNFL Inc. TWRS-P Facility will be situated approximately 8.5 mi from the closest Hanford Site boundary line and, therefore, is well over the required 500 ft from the nearest state or federally designated park, recreation area, or national monument.

Wilderness Areas. The proposed BNFL Inc. TWRS-P Facility site is over 5 mi from the Fitzner/Eberhardt Arid Lands Ecology Reserve, which is located in the southwest portion of the Hanford Site. The BNFL Inc. TWRS-P Facility will not be within 500 ft of any wilderness areas, as defined by the *Wilderness Act of 1964*.

Farmland. The BNFL Inc. TWRS-P Facility will be located approximately 8.5 mi from the boundary of the Hanford Site and is not within 500 ft of any areas identified as prime farmland.

2.5.2.3. Residences and Public Gathering Places

The BNFL Inc. TWRS-P Facility will be located approximately 8.5 mi from the boundary of the Hanford Site, and is not within 0.25 mi of any residences or public gathering places.

2.5.2.4. Land Use Compatibility

The Hanford Site conforms with local land-use zoning designation requirements as approved by Ecology under RCW 70.105.

2.5.2.5. Archeological Sites and Historic Sites

No places or objects listed on or proposed for national, state, or local preservation registers are known to be present on the proposed site for the BNFL Inc. TWRS-P Facility. No archaeological, historical, or Native American religious sites of significance have been identified on the BNFL Inc. TWRS-P Facility site (PNNL 1998b).

3. Ten-Year Compliance History

Appendix B summarizes Notice of Compliance Violations and the associated responses for DOE-RL and BNFL Inc. The DOE summary and the correspondence associated with notices of compliance violations can be obtained by contacting the following:

Public Access Room H6-08
P.O. Box 1970
Richland, Washington 99352
(509) 372-3411

The BNFL Inc. summary and the associated correspondence can be obtained by contacting the following:

Mr. Maurice J. Bullock, General Manager
BNFL Inc.
2940 George Washington Way
Richland, Washington 99352
(509) 371-3100

4. Justification of Need [WAC 173-303-281(3)(vii)]

In May 1989, DOE, Ecology, and the EPA formally entered into an agreement known as the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1996). The purpose of this agreement was to ensure that the Hanford Site achieved compliance with federal, state, and local laws concerning the management of waste, and to establish milestone dates for achieving remediation and cleanup goals at the Hanford Site.

In July 1996, the Tri-Party Agreement was amended to incorporate DOE's strategy for privatizing future tank waste processing and treatment efforts. Requirements for remediation of tank farm waste that were incorporated into the agreement include initiation and completion of LAW and HLW pretreatment and immobilization. The proposed BNFL Inc. TWRS-P Facility

will provide for the treatment of LAW and HLW, which is necessary to comply with the requirements of the Tri-Party Agreement.

The TWRS-P Facility will permanently isolate the waste from humans and the environment to the greatest extent practicable and provide protection of public health and the environment. This isolation will reduce the potential for migration of the waste from the storage tanks where the waste currently resides.

4.1. Impact on Overall Capacity at the Hanford Site and in Washington State

The current capacity for treating and storing mixed waste is limited within Washington State and the Hanford Site. The BNFL Inc. TWRS-P Facility will provide unique capabilities as a dedicated tank waste treatment facility at the Hanford Site. The capability to pretreat and immobilize LAW and HLW does not exist at the Hanford Site or within Washington State at this time.

4.2. Higher Priority Management Method

Currently, immobilization (by vitrification) is the best available technology for treating the identified tank farm system mixed waste. Because the waste is radioactive, waste reduction and recycling alternatives do not exist for the waste to be treated in the BNFL Inc. TWRS-P Facility.

4.3. Technology Availability and Cost Impacts

The BNFL Inc. TWRS-P Facility will provide unique treatment for specific Hanford Site waste. As a result, the BNFL Inc. TWRS-P Facility may provide opportunities for technology transfer to treat similar waste more economically at other locations.

5. References

1. 40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," *Code of Federal Regulations*, as amended.

2. 40 CFR 270, "EPA-Administered Permit Programs — The Hazardous Waste Permit Program," *Code of Federal Regulations*, as amended.

3. 62 CFR 8693, "Record of Decision for the Tank Waste Remediation System, Hanford Site, Richland Washington," *Federal Register*, February 26, 1997.

4. DOE, 1987, *Final Environmental Impact Statement: Disposal of Hanford Defense High-Level, Transuranic and Tank Wastes*, Vols. 1-5, DOE/EIS-0113, U.S. Department of Energy, Washington, D.C.

5. DOE, 1988, *Site Characterization Plan, Consultation Draft*, DOE/RW-0164, Vol. 1, U.S. Department of Energy, Washington, D.C.

6. DOE, 1996a, *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement*, DOE/EIS-0189, U.S. Department of Energy, Washington, D.C.

7. DOE, 1996b, *Draft Hanford Remedial Action Environmental Impact Statement and Comprehensive Land Use Plan*, DOE/EIS-0222, U.S. Department of Energy, Washington, D.C.

8. DOE, 1998, *Supplement Analysis for the Tank Waste Remediation System*, DOE/EIS-0189-SA2, U.S. Department of Energy, Washington, D.C.

9. DOE-RL, 1988, *Hanford Facility Dangerous Waste Part A Permit Application*, Vols. 1-3, DOE/RL-88-21, U.S. Department of Energy, Richland Operations Office, Richland, Washington, as amended.

10. DOE-RL, 1996, *Draft Hanford Site Biological Resources Management Plan*, DOE/RL-96-32, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

11. DOE-RL, 1997, *Hanford Facility Dangerous Waste Permit Application, General Information Portion*, DOE/RL-91-28, Rev. 3, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

12. DOE-RL, 1998, *Mitigation Action Plan for the U.S. Department of Energy, Hanford Site, Tank Waste Remediation System-Privatization, Phase I Facility Construction*, May 1998, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

13. Ecology, 1996, *Hanford Facilities Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion*, WA 7890008967, Washington State Department of Ecology, Olympia, Washington.

14. Ecology, EPA, and DOE, 1996, *Hanford Federal Facility Agreement and Consent Order*, Washington State Department of Ecology, U.S. Environmental Protection Agency, U.S. Department of Energy, Olympia, Washington.

15. ICBO, 1997, *Uniform Building Code*, International Conference of Building Officials, Whittier, California.

16. *National Environmental Policy Act of 1969*, Public Law 91-190, 83 Stat. 852, Title 42.

17. PNNL, 1997a, *Hanford Site National Environmental Policy Act (NEPA) Characterization*, PNL-6415, Rev. 9, Pacific Northwest National Laboratory, Richland, Washington.

18. PNNL, 1997b, *Hanford Site Groundwater Monitoring for Fiscal Year 1996*, PNL-11470, Pacific Northwest National Laboratory, Richland, Washington.

19. PNNL, 1998a, *Biological Review of Project W-519, Site Development for the Tank Waste Remediation System, Phase One Privatization, 200E and 600 Areas*, ERC #98-200-022a, May 29, 1998, Pacific Northwest National Laboratory, Richland, Washington.

20. PNNL 1998b, "Cultural Resources Review of the TWRS Mitigation Planning Support – Phase One Project. HCRC #98-0200-022," PNNL Letter form Laurie L. Hale to Kevin Kjarmo, May 22, 1998.

21. RCW 43.21C, "State of Washington Environmental Policy Act," *Revised Code of Washington*, as amended.

22. RCW 70.105, "Hazardous Waste Management," *Revised Code of Washington*, as amended.

23. RCW 79.70, "Natural Area Preserves," *Revised Code of Washington*, as amended.

24. RCW 90.44, "Regulation of Public Ground Waters," *Revised Code of Washington*, as amended.

25. *Resource Conservation and Recovery Act of 1976*, Public Law 94-580, October 21, 1976, 90 Stat. 2795, Title 42.

26. *Safe Drinking Water Act of 1974*, Public Law 93-523, 88 Stat. 1660, Title 21.

27. WAC 173-216, "State Waste Discharge Permit Program," *Washington Administrative Code*, as amended.

28. WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, as amended.

29. WAC 173-400, "General Regulations for Air Pollution Sources," *Washington Administrative Code*, as amended.

30. WAC 173-401, "Operating Permit Regulations," *Washington Administrative Code*, as amended.

31. WAC 173-460, "Controls for New Sources of Toxic Air Pollutants," *Washington Administrative Code*, as amended.

32. WAC 173-480, "Ambient Air Quality Standards and Emission Limits for Radionuclides," *Washington Administrative Code*, as amended.

33. WAC 197-11, "SEPA Rules," *Washington Administrative Code*, as amended.

34. WAC 246-247, "Radiation Protection — Air Emissions," *Washington Administrative Code*, as amended.

35. WAC 246-272, "On-Site Sewage Systems," *Washington Administrative Code*, as amended.

36. WAC 248-54, "Public Water Supplies," *Washington Administrative Code*, as amended.

37. WHC, 1991, *Geology and Hydrology of the Hanford Site: A Standardized Text for Use in Westinghouse Hanford Company Documents and Reports*, WHC-SD-ER-TI-003, Westinghouse Hanford Company, Richland, Washington.

38. *Wilderness Act of 1964*, Public Law 88-577, 78 Stat. 890, Title 16.

APPENDIX A

FACILITY TOPOGRAPHIC MAP

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APPENDIX B

SUMMARY OF NOTICES OF DOE-RL AND BNFL INC. COMPLIANCE VIOLATIONS AND DOE-RL AND BNFL INC. RESPONSES

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The Notice of Intent regulations stated in *Washington Administrative Code* 173-303-281(3)(vi) require that a complete summary of compliance violations and associated correspondence be submitted for hazardous waste management facilities owned or operated by the applicant for a period of 10 calendar years preceding the application.

Because BNFL Inc. is the facility owner and operator, and U.S. Department of Energy, Richland Operations Office (DOE-RL) is the facility owner, both compliance summaries are provided in this appendix.

BNFL Inc.

There have been no compliance violations of permit conditions at hazardous waste management facilities owned or operated by BNFL Inc., its subsidiaries, or its parent company in the United States of America during the past 10 calendar years. BNFL Inc.'s parent company has received violation notices for three wastewater discharge violations at a treatment facility in Sellafield, England. All three violations have been satisfactorily resolved with the United Kingdom's Environment Agency.

DOE-RL

Attachment 1 provides a detailed summary of the formal compliance violations and associated correspondence for DOE-RL and its prime contractors.

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ATTACHMENT 1

ENFORCEMENT ACTIONS TRACKING SYSTEM NOTICES FROM THE REGULATORS SUMMARY REPORT

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HANFORD SITE
COMPLIANCE VIOLATIONS AND
RESPONSE SUMMARY

11/23/98

Date Received: September 24, 1998
Agency: Ecology

SUMMARY:

Ecology issued Administrative Order 98NW-009 on September 24, 1998, requiring RL, FDH, and LMHC to comply with RCW 70.105, WAC 173-303, and by reference 40 CFR by taking certain prescribed actions. The prescribed actions pertain to documenting appropriate leak detection at each of the twenty-eight double shelled tanks at Hanford.

RESPONSE(S):

Following senior level discussions, the Attorney General of Washington issued a stay of Order 98NW-009. The stay was extended until January 29, 1999, to aid in the process of settlement of the issues in the appeal of that order to be filed by the appellants to the PCHB.

No formal decision from the PCHB has been received to date.

Date Received: July 23, 1998
Agency: Ecology

SUMMARY:

Ecology assessed a Penalty 98NW-007 against RL, FDH, and LMHC in the amount of $75,600 under the provisions of the RCW 70.105.080. RL, FDH, and LMHC failed to provide a leak detection system for double-shell tanks SY 101, 102, and 103 capable of detecting a leak from the primary or secondary structure of these tanks within 24 hours.

RESPONSE(S):

RL submitted an Application for relief of Penalty, 98NW-007, which was received by Ecology on August 7, 1998. After a review of the application, Ecology formally denied the application in writing on September 24, 1998. The denial allowed the petitioners to appeal to the PCHB within 30 days of receipt of denial. RL in turn appealed the denial to the PCHB on September 23, 1998.

No formal decision from the PCHB has been received to date.

Date Received: July 10, 1998
Agency: WDOH

SUMMARY:

WDOH issued a NOV to DOE for violations of radioactive air emissions regulations at the 296-A-42 major emission unit. This violation involved the bypassing of required controls and the lack of any notification to the WDOH concerning the subsequent loss of integrity of the filtration system. With a potential to emit of over 3,000 mrem/year to the MEI, that failure could have resulted in a significant offsite impact.

RESPONSE(S):

Compliance Order #1 was met with the submittal of required documentation by RL letter on August 21, 1998. Compliance Orders #2 and #3 were met with the submittal of required documentation by RL letter on August 10, 1998.

No further response from Ecology has been received to date.

Date Received: May 13, 1998
Agency: WDOH

SUMMARY:

WDOH issued a NOV under RCW 70.94.332 and WAC 246-247-100 for violation of radioactive air emissions regulations in the operation of the Plasma Arc Furnace in the 324 Building Waste Technology Engineering Laboratory, located in the 300 Area. The NOV also contained a Compliance Order consisting of three requirements.

RESPONSE(S):

Compliance Order, requirement #3 directed RL to notify WDOH of discrepancies between Hanford Site NOCs and actual or planned work. The due date for the required notification was 8-25-98. A report notifying WDOH of the required information was transmitted to WDOH on 8-20-98.

The report (dated 8-20-98) will be reviewed by WDOH to determine if revisions need to be made to Hanford Site NOCs. The due dates for any such revisions will be negotiated between RL and WDOH.

Date Received: 02/25/98
Agency: EPA

SUMMARY:

On February 25, 1998, EPA issued a NOV to DOE for violating requirements defined in the ERDF Record of Decision

RESPONSE(S):

BHI submitted revised calculations to WDOH showing the adequacy of the monitoring system for 50,000 square foot of exposed face. WDOH reviewed the calculations and have given verbal concurrence that the calculations can be used as basis for the adequacy of existing monitors for this revised operating mode. IDW management issues and changes in procedures and operating practices were revised to address the IDW management issues raised by Ecology in the NOV.

No formal notice of closure has been received from the EPA.

Date Received: 09/16/97
Agency: Ecology

SUMMARY:

Ecology issued a NOC and NOP to DOE concerning a reaction of chemicals in the PRF located within PFP. Corrective measures (CM) described at the end of the NOC letter were developed after the meetings regarding on-going actions being performed by DOE and its contractors.

RESPONSE(S):

In January 1998, Ecology performed a compliance inspection at PFP. It is DOE's understanding that Ecology intends to incorporate further discussion regarding the disposition of the items subject to CM 6 into closure actions to be taken following issuance of the Ecology compliance inspection report. While DOE has been waiting issuance of Ecology's compliance inspection report, DOE pursued field activities to disposition the remaining items. No report has been received concerning this Ecology inspection

On February 2, 1998, DOE transmitted a letter to Ecology identifying the remaining CMs and requested an extension date of July 1, 1998. On March 16, 1998, DOE sent a letter to Ecology supplying a status related to the disposition of the items identified in CM 4. This letter also transmitted the emergency preparedness documentation being submitted for the closure of CM 1 and 2 for Ecology's review and comment.

On April 15, 1998, DOE submitted final documentation to close out CM 1 and 2 that will become effective on July 1, 1998.

Date Received: 11/07/96
Agency: Ecology

SUMMARY:

On September 27, 1996, Ecology conducted an investigation of the 222-S Laboratory regarding a September 13, 1996 incident. Chemicals were mixed resulting in a breach of the container and a release of hazardous materials. During the investigation Ecology expressed concerns with the management of satellite accumulation areas (SAAs) and verification of process waste generated outside of the 222-S Laboratory. Formal correspondence was sent to DOE, FDH, and RFSH from Ecology stating that Ecology was not pursuing formal enforcement. Six violations and one concern were identified.

RESPONSE(S):

DOE issued a formal response to Ecology on February 3, 1997, indicating completed status for Corrective Measures 3, 4, 6, and portions of 2 and provided status on the remaining corrective measures

Ecology continued the inspection of the 222-S Laboratory on February 13, 1997. Following the inspection, operations of the liquid waste generating activities at the 222-S Laboratory were suspended by management. This decision was voluntary and a controlled method-by-method resumption of analytical work was implemented, which resulted in significant improvements in all waste management activities. Ecology was informed of the new process.

In February 1998, DOE and Ecology agreed in principal to a negotiated settlement of the alleged violations and pending fine. DOE and 222-S Laboratory will pay $35,000 for a nature preserve. The 222-S Laboratory will be required to follow the operational criteria for SAA management in the 222-S Laboratory, as stipulated by Ecology in the settlement agreement. $40,000 payment suspended during a 2-year period provided there are no material violations at the 222-S Laboratory.

Date Received: 07/24/96
Agency: Ecology

SUMMARY:

Ecology performed an inspection of the 306-E Facility to follow up an Ecology inspection that occurred on September 14, 1995. One of the issues that Ecology had at that time concerned material being stored in two cabinets that contained what Ecology said appeared to be incompatible chemicals that could pose a threat to human health and the environment. Ecology issued a VCL on July 24, 1996, for storage of incompatible waste.

Ecology issued a formal NOP to DOE and WHC that included a $20,000 fine concerning storage of incompatible waste.

RESPONSE(S):

A formal response letter and payment of penalty was sent from WHC to Ecology on October 21, 1996. This enforcement action is considered closed. On August 1, 1997, Ecology transmitted a letter of closure for the 306-E Facility stating that the corrective measures have been satisfied.

Date Received: 03/06/96
Agency: Ecology

SUMMARY:

Ecology issued a NOV (DE 96NM-033) to DOE alleging violation of WAC 173-400-141, -110, and -115 dealing with PSD permitting, new source review, and new source performance standards under Washington's Clean Air Act.

The NOV was issued on March 6, 1996. Ecology alleges that DOE is in violation of WAC 173-400-141 for failure to apply for and obtain the required state PSD permit and then operate the 300 Area boiler package without the permit, and in violation of WAC 173-400-115 for failure to meet new source performance standards for SO_2 emission limits from the boiler. Construction of the 300 Area package boiler commenced in September 1989. Ecology determined that construction of the boiler constituted a major modification of the source subject to the PSD permit requirements. Additionally, the boiler has burned No. 6 fuel oil, and Ecology estimates that the SO_2 emission rates exceed the NSPS's SO_2 emission limits.

RESPONSE(S):

On August 12, 1996, Ecology transmitted their Agreed to Order to close this NOV. The Order proposes to close the NOV without fines or penalties if followed by DOE.

Date Received: 01/19/96
Agency: Ecology

SUMMARY:

Ecology issued a Notice of Penalty Incurred and Due (No. DE 96-NW-001) to DOE and BHI. The penalty was assessed based on a violation revealed from an investigation into dangerous waste management activities at the 183-H basins closure project. A $5,000 fine was assessed against DOE and BHI.

RESPONSE(S):

Date Received: 05/30/95
Agency: Ecology

SUMMARY:

On May 30, 1995, Ecology issued a Notice of Penalty Incurred and Due (No. DE 95NW-127) to DOE and PNL after a pressurized drum that was improperly opened damaged the facility, caused worker contamination, and released radioactive material.

RESPONSE(S):

On August 7, 1995, Ecology transmitted a letter to DOE closing this action. This item was closed before initiation of this tracking system.

Date Received: 03/09/94
Agency: Ecology

SUMMARY:

Ecology issued an Order (No. DE 94NM-063) and Notice of Penalty Incurred and Due (No. DE 94NM-062) against the COE for disposing dangerous waste at the Richland Landfill, and against DOE for not providing adequate dangerous waste training to COE employees. Ecology assessed a penalty of $9,500 against DOE and a $6,000 penalty against COE. The fines stem from the accidental dumping of dangerous waste at the landfill as part of the cleanup activity ongoing at the North Slope. The incident occurred late in 1993.

RESPONSE(S):

On April 15, 1994, Ecology sent a letter to DOE and COE stating satisfaction that the corrective items identified in the Order had been completed, and approved the restart of dangerous waste management work on the North Slope. Ecology also requested in the letter that before the generation or potential generation of hazardous or mixed waste at identified past-practice waste sites. that Waste Control Plans be submitted to them for approval. Ecology stated that the "letter serves as a notice of completion of Order requirements," except for the ongoing requirements of the Waste Control Plans, and stated that the "entire case will be resolved upon payment" of the Penalty. This item was closed before initiation of this tracking system.

Date Received: 03/10/93
Agency: Ecology

SUMMARY:

Ecology issued a CO and NOP Incurred and Due for failure to adequately designate approximately 2,000 containers of solid waste. The NOP stipulated a penalty of $100,000. DOE and WHC disputed portions of the Order and Notice of Penalty.

RESPONSE(S):

DOE, WHC, and Ecology agreed to resolutions to the disputed portions, which were agreed to by the Washington State PCHB, which modified the Order and Notice of Penalty.

The settlement agreement for the Compliance Order required submittal of a waste analysis plan (WAP) to confirm or complete the designation of the waste in question. Extensive negotiations regarding the content of the WAP occurred between DOE, WHC, and Ecology, and final approval was granted by Ecology on November 1, 1993. Confirmation or completion of the waste designation, following the process established by the WAP, was required by September 1, 1994.

Negotiations regarding an alternative to the payment of the $100,000 penalty resulted in an agreement as amended July 7, 1995. This agreement allows DOE to set up an Environmental Protection Scholarship in the amount of $40,000 at Columbia Basin College. The agreement also allows payment to PNL and the Washington Department of Wildlife to plan for and carry out a sagebrush revegetation effort on the Hanford Arid Lands Ecology Reserve, and to work on a Priority Habitat and Species Map for Hanford.

On August 24, 1994, DOE transmitted a package to Ecology that completed the actions required by the Order. This item was closed before initiation of this tracking system.

Date Received: 02/03/93
Regulator: EPA

SUMMARY:

EPA issued a Compliance Order to DOE alleging noncompliance with the National Emission Standards for Hazardous Air Pollutants for radionuclides.

RESPONSE(S):

EPA and DOE negotiated a FFCA on February 7, 1994, to allow DOE to confirm compliance or meet the compliance requirements of 40 CFR 61, Subpart H. The FFCA superseded the compliance order and this will no longer be tracked as an open item. This item was closed before initiation of this tracking system.

Date Received: 02/02/93
Agency: WDOH

SUMMARY:

WDOH issued a NOV for radioactive air emission issues related to the proposed fuel encapsulation activities at the 100-KE fuel storage basins. The NOV stated that DOE and WHC have initiated work that directly supports fuel encapsulation without approval of WDOH. The NOV formally directed DOE and WHC to stop all work at the 100-KE Basins immediately.

RESPONSE(S):

DOE and WHC formally responded to the NOV, and a Notice of Construction permit was issued in the fall of 1993. This item was closed before initiation of this tracking system.

Date Received: 10/23/92
Agency: EPA

SUMMARY:

The EPA issued a Notice of Noncompliance based on an inspection conducted in September 1991. One violation related to the cleanup of a PCB spill was identified. On November 13, 1992, DOE responded to the Notice of Noncompliance.

RESPONSE(S):

DOE stated in the response that the cleanup of the PCB spill was completed on September 28, 1991, not October 1, 1991, as alleged in the Notice of Noncompliance. DOE also outlined corrective actions to ensure that cleanup of PCB spills are initiated and completed within the required 48 hours.

On November 25, 1992, EPA sent a letter to DOE stating they were satisfied with DOE's response and corrective actions and closed the issue. This item was closed before initiation of this tracking system.

Date Received: 04/25/90
Agency: DOT

SUMMARY:

On April 25, 1990, the DOT issued a Federal Railroad Administration Probable NOV against WHC for violating the Hazardous Materials Transportation Act, and fined WHC $3,000.

RESPONSE(S):

The procedures were corrected to the satisfaction of DOT and, after negotiations, the fine was reduced to $2,100, which was paid by WHC. This item was closed before initiation of this tracking system.

Date Received: 07/20/89
Agency: Ecology

SUMMARY:

Ecology issued DOE and WHC a NOV based on their July 20, 1989, inspection of the 216-A-29 Ditch, 216-B Pond, and the Central Waste Complex.

Issues included the following; (1) the need to construct, at a minimum, a continuous single-strand chain fence with appropriate warning signs around the 216-A Ditch by September 30, 1989; (2) four radiation warning signs were found unsecured on the ground near the 216-A-29 Ditch and 216-B Pond facilities; and (3) 10 waste drums at Central Waste Complex were found to have exceeded the 90-day accumulation period while at the generating facility.

RESPONSE(S):

A continuous single-strand barrier was installed around the 216-A-29 Ditch and 216-B Pond. The unsecured signs have been reposted. Periodic inspections will be conducted to identify necessary corrective actions such as unsecured signs.

The 10 waste drums that exceeded the 90-day accumulation period were identified as originating from PFP. These drums were partially characterized and transferred to the Central Waste Complex for proper storage. A letter identifying the dangerous and mixed waste satellite and less-than-90-day accumulation areas on the Hanford Site was transmitted to Ecology. This item was closed before initiation of this tracking system.

Date Received: 06/12/89
Agency: Ecology

SUMMARY:

Ecology issued DOE and WHC a NOV based on their June 12, 1989, inspection of the 183-H Basins and 216-S-10 Pond and Ditch.

Issues included the following; (1) the need to construct at least a continuous single-strand rope fence with appropriate warning signs around the 216-S-10 Pond and Ditch before August 15, 1989; and (2) the need to stabilize two corroded and leaking drums containing mixed waste located at the 183-H Basins.

RESPONSE(S):

A single-strand barrier rope was installed with the appropriate warning signs around the 216-S-10 Pond and Ditch. The contents of the leaking drums were removed and repackaged in appropriately prepared drums. An inspection was conducted on the other drums containing dangerous waste at the 183-H facility and no other irregularities were noted. The Central Waste Complex, which receives 183-H dangerous waste drums, was inspected and no irregularities were noted. An analysis also was conducted on the probable cause of the corrosive material found on the drums. The results were presented to Ecology. This item was closed before initiation of this tracking system.

Date Received: 04/11/89
Agency: Ecology

SUMMARY:

Ecology issued DOE and WHC a NOV based on their April 10-11, 1989, inspection of B Pond and the Nonradioactive Dangerous Waste Landfill.

Issues included the following; (1) the need to construct at least a continuous single-strand rope fence with warning signs around B Pond and each of the three associated lobes; (2) the need to repair a 25-foot breach in the security fence surrounding the Nonradioactive Dangerous Waste Landfill; and (3) the need to evaluate the wooden pier over the 216-A-29 Ditch for stability and to establish load limits for its use.

RESPONSE(S):

The single-strand rope fence with appropriate warning signs has been installed around B Pond and its three lobes. The fence at the Nonradioactive Dangerous Waste Landfill has been repaired. The wooden pier over the 216-A-29 Ditch has been taken out of service, "DANGER - KEEP OFF" signs have been posted, and the structures have been barricaded. This item was closed before initiation of this tracking system.

List of Acronyms:

BHI	Bechtel Hanford, Inc.
CAA	Clean Air Act
CM	Corrective Measure(s)
CO	Compliance Order
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
DST	Double Shell Tank
Ecology	State of Washington Department of Ecology
EPA	Environmental Protection Agency
ERDF	Environmental Restoration Disposal Facility
FDH	Fluor Daniel Hanford
FFCA	Federal Facilities Compliance Agreement
LMHC	Lockheed Martin Hanford Company
MEI	Maximally Exposed Individual
NOC	Notice of Correction
NOV	Notice of Violation
PCB	Polychlorinated Biphenols
PCHB	Pollution Control Hearings Board
PFP	Plutonium Finishing Plant
PRF	Plutonium Reclamation Facility
PSD	Prevention of Significant Deterioration
RCW	Revised Code of Washington
RFSH	Rust Federal Services of Hanford
SAA	Satellite Accumulation Area
VCL	Voluntary Compliance Letter
WAC	Washington Administrative Code
WDOH	State of Washington Department of Health
WHC	Westinghouse Hanford Company

APPENDIX C

STATE ENVIRONMENTAL POLICY ENVIRONMENTAL CHECKLIST FOR THE BNFL INC. TWRS-P FACILITY

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STATE ENVIRONMENTAL POLICY ACT
ENVIRONMENTAL CHECKLIST

FOR THE

NOTICE OF INTENT
FOR BNFL INC. TWRS-PRIVATIZATION FACILITY

November 1998

A. BACKGROUND

1. Name of proposed project, if applicable:

This *State of Washington Environmental Policy Act of 1971* (SEPA) Environmental Checklist is being submitted for a proposed new treatment, storage, and/or disposal (TSD) facility to treat mixed waste currently stored in tank systems at the Hanford Site. This SEPA checklist is submitted as part of the BNFL Inc. Tank Waste Remediation System-Privatization (TWRS-P) Notice of Intent (NOI). The construction and operation of the proposed new TSD facility will be undertaken as part of the U.S. Department of Energy's (DOE) TWRS-P effort. The dangerous waste permit application will be filed by the U.S. Department of Energy, Richland Operations Office (DOE-RL) as owner, and by BNFL Inc. as owner and operator of the facility. The proposed TSD facility is hereinafter referred to as the BNFL Inc. TWRS-P Facility. For a list of references used for this checklist, see Section 5 of the NOI.

2. Name of applicants:

U.S. Department of Energy, Richland Operations Office and
BNFL Inc.

3. Address and phone number of applicants and contact persons:

U. S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

BNFL Inc.
2940 George Washington Way
Richland, Washington 99352

Contact:

Mr. J. E. Rasmussen, Director
Environmental Assurance, Permits
and Policy Division
(509) 376-5441

Mr. Maurice J. Bullock
BNFL Inc. General Manager
(509) 371-3100

4. Date checklist prepared:

November 1998

5. Agency requesting the checklist:

Washington State Department of Ecology
Kennewick Office
1315 West 4th Avenue
Kennewick, Washington 99336

6. Proposed timing or schedule (including phasing, if applicable):

This SEPA Environmental Checklist is being submitted to support preparation of a NOI to submit a Part B permit application for treating waste from the Tank Waste Remediation System (TWRS). The Part B permit application will be submitted 150 days after the NOI submittal.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The BNFL Inc. TWRS-P Facility will be constructed to support Phase I privatization treatment of approximately 530,000 ft^3 per year of mixed waste from the tank systems on the Hanford Site. Future contract negotiations with DOE could result in the need for modification or expansion of treatment or storage capacities in the facility.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

The BNFL Inc. TWRS-P Facility was included in the *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement* (DOE 1996a), which was jointly issued by the DOE and the Washington State Department of Ecology (Ecology) to fulfill the environmental review requirements of the *National Environmental Policy Act of 1969* (NEPA) and SEPA. In addition, the supplement analysis for TWRS (DOE 1998) and the mitigation action plan for phase I privatization facilities (DOE-RL 1998) have been approved by DOE.

The TWRS-P Part B Dangerous Waste Permit Application will be submitted alongwith the required air permit applications, septic permit application, and other required permit applications in support of the construction, operation, and closure of this facility.

9. Do you know whether applications are pending for government approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

No known applications are pending for government approvals of other proposals directly affecting the proposed property.

10. List any government approvals or permits that will be needed for your proposal, if known.

Ecology is the lead agency authorized to approve the dangerous waste permit application Part A, Form 3, and Part B for the BNFL Inc. TWRS-P Facility pursuant to the requirements of *Washington Administrative Code* (WAC) 173-303-806 and 40 *Code of Federal Regulations* (CFR) Part 270.

Emissions from the BNFL Inc. TWRS-P Facility will be permitted under the State of Washington Department of Ecology Air Operating Permit Regulations (WAC 173-400, 173-401, 173-460, and 173-480), State of Washington Department of Health radioactive air emissions licensing (WAC 246-247), and U.S. Environmental Protection Agency (EPA) (40 CFR 61) regulations.

Industrial waste water discharges including the concrete batch plant waste water and storm water collection areas will be permitted under the *State Waste Discharge Permit Program* (WAC 173-216) as appropriate. Discharges from the sanitary sewer system will be permitted according to the *On-Site Sewage Systems* (WAC 246-272) requirements.

The DOE Regulatory Unit (RU) is responsible for oversight of nuclear and process safety for the TWRS-P Facility. To implement that responsibility, the RU will review and approve the authorization basis prepared by BNFL Inc. as required for design, construction, and operation of the TWRS-P Facility.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page.

The BNFL Inc. TWRS-P Facility is proposed as a dedicated waste treatment and storage facility that will receive a mixed waste stream from Hanford's double-shell and single-shell tank farm systems. The waste will contain organic, inorganic, and radionuclide constituents. The facility will provide capabilities for vitrification treatment of low-activity waste (LAW) and high-level waste (HLW).

The waste treated in the LAW waste process primarily will be the liquid supernatant portion of LAW, with minor volumes of entrained solids, which is stored in the tank systems at the Hanford Site. The HLW treatment process will allow for the additional treatment of a HLW stream with a higher solids content. It is estimated that the amount of mixed waste to be treated in the BNFL Inc. TWRS-P Facility will be 4,000,000 gallons per year.

12. **Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.**

The BNFL Inc. TWRS-P Facility will be located in the 200 East Area of the Hanford Site, Benton County, Washington. This location is in agreement with the comprehensive land use plan (DOE 1996b). The new facility will be used for treatment and greater-than-90-day storage of dangerous mixed waste.

A small-scale map depicting the Hanford Site and the location of the BNFL Inc. TWRS-P Facility is provided in Figure 1 of the NOI. Appendix A of the NOI contains a large-scale map and a topographic map.

TO BE COMPLETED BY APPLICANT

EVALUATIONS FOR AGENCY USE ONLY

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other_____.

The site is flat.

b. What is the steepest slope on the site (approximate percent slope)?

The approximate slope of the land is less than 2%.

c. What general types of soils are found on the site (for example, clay, sandy gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Soil types for the 200 Areas of the Hanford Site are described in Volume I of the TWRS final EIS, Section 4.1.4 (DOE 1996a). In general, soil types in the 200 Areas and around the BNFL Inc. TWRS-P Facility consist mainly of eolian and fluvial sands and gravel. More detailed information concerning specific soil classifications can be found in *Hanford Site National Environmental Policy Act (NEPA) Characterization* (PNNL 1997a). Farming is not permitted on the Hanford Site.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No. The proposed BNFL Inc. TWRS-P Facility site is not located in an area of slope or soil instability, or in an area affected by unstable slope or soil conditions.

e. **Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.**

Clearing and grading of land is the first activity in the sequence of construction and facility startup. Approximately 350,000 yd^3 of earth work is planned. Clearing and grading will be followed by excavation compaction and then facility construction.

An area below the grade slab will be fine graded. Aggregate and fill for fine grading will be brought from quarry sites and borrow pits on or near the Hanford Site.

f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Yes. During construction following initial disturbances and before revegetation, wind and storm water runoff erosion is possible. These conditions should be present only for a relatively short period of time. Land used only for construction purposes will either remain covered with gravel or be restored to original condition after construction and returned to DOE for revegetation. Due to the possibility of redisturbance for future work, reseeding of construction laydown areas and other portions of the site will use standard Washington State Department of Transportation seed mix. Infrastructure construction, such as transmission corridors, will be reseeded using a native grass and sagebrush seed mix.

A sizable portion of the BNFL Inc. site, and also of nearby land, has been previously disturbed. Disturbance in the surrounding areas includes the construction of roads, processing facilities, pipelines, and other facilities and infrastructure associated with the production of plutonium and waste management. Impact from BNFL Inc.'s grading activities on surface or near surface geologic

features will be confined to small, localized topographic changes where facilities are constructed.

g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

DOE is providing a total of approximately 119 acres of land for the construction of the BNFL Inc. TWRS-P Facility. Approximately 55 acres will be occupied by the operational BNFL Inc. TWRS-P Facility and potentially covered with an impervious surface. The remaining 64 acres will be used temporarily during construction for workforce parking, lay down area, and stockpiling. With completion of construction, the temporary area will either remain covered with gravel or be demobilized and returned to DOE for revegetation. Small portions of the construction area may be covered with concrete and/or asphalt to provide proper material storage and temporary construction offices. These concrete and/or asphalt areas will remain upon completion of construction.

h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Gravel and dust suppression techniques will be used to reduce or control erosion in the construction area. Land used only for construction purposes will either remain covered with gravel or be restored to original condition and revegetated after construction. Due to the possibility of redisturbance for future work, reseeding of construction laydown areas and other portions of the Phase IB site will use standard Washington State Department of Transportation seed mix.

2. Air

a. **What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally**

describe and give approximate quantities, if known.

Construction activities may have associated dust emissions. Minor amounts of exhaust would be generated by vehicles used to gain access to the site. Emissions from the treatment facility will be regulated under the appropriate permits.

b. **Are there any off-site sources of emissions or odors that may affect your proposal? If so, generally describe.**

No.

c. **Proposed measures to reduce or control emissions or other impacts to the air, if any?**

Dust control measures will be applied during construction to reduce fugitive dust and PM10 emissions. These measures may include watering or application of dust control chemicals. The primary and secondary off-gas controls specified for the BNFL Inc. TWRS-P Facility designs are expected to result in emissions that would be substantially below both Federal and State standards in all areas open to the public. Commercially available treatment systems will treat the steam boiler and standby generator emissions to levels compliant with applicable standards.

In addition, good engineering practices will be followed, and actions would comply with onsite procedures designed to protect human health and the environment. Administrative control practices will limit air emissions and protect worker health.

3. **Water**

a. **Surface**

1) **Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal**

streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

There is no surface water body on or in the immediate vicinity of the BNFL Inc. TWRS-P Facility. Two ephemeral creeks traverse through the Hanford Site: Cold Creek and Dry Creek. Cold Creek is located approximately 7 miles southwest of the BNFL Inc. TWRS-P Facility. Dry Creek is located approximately 10 miles west southwest of the BNFL Inc. TWRS-P Facility. These creeks flow only during and shortly after rainfall and snowmelt. No perennial streams originate within the Pasco Basin. Primary surface water features associated with the Hanford Site are the Columbia River and Yakima River and their major tributaries, the Snake River and Walla Walla River. West Lake, approximately 10 acres in size and less than 3 ft deep, is the only natural lake within the Hanford Site. Waste water ponds, cribs, and ditches associated with nuclear fuel reprocessing and waste disposal activities also are present on the Hanford Site.

2) **Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.**

No.

3) **Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.**

None. There would be no dredging or filling from or to surface water or wetlands.

4) **Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.**

The water supply for the 200 Areas is pumped from the Columbia River. DOE will provide the BNFL Inc. TWRS-P Facility with the following: raw water at approximately 120 gallons per minute, based on a 24-hour average; up to 2,500 gallons per minute of fire suppression water; and potable water at 50 gallons per minute, based on a 24-hour average. The amounts estimated for the BNFL Inc. TWRS-P Facility are insignificant compared to normal daily water quantity used in the 200 Areas.

5) **Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.**

The BNFL Inc. TWRS-P Facility is not within the 100-year or 500-year flood plains. Refer to the flood plain map depicted as Figure 3 in the NOI.

6) **Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.**

No.

b. Ground

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn in support of the project, and water will not be discharged to the aquifer. For the BNFL Inc. TWRS-P Facility, liquids may be discharged to other permitted facilities (e.g., Effluent Treatment Facility and Treated Effluent Disposal Facility) that will discharge to the ground. At the BNFL Inc. TWRS-P Facility, the depth to groundwater is over 260 ft. Sanitary sewage will be discharged to permitted leach fields. Liquid from the concrete batch plant may be discharged to the ground during construction.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals... agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

During construction, BNFL Inc. plans to dispose of approximately 37,500 gal/day of sanitary waste in onsite septic leach fields. During operations, 17,500 gal/day of human waste will be discharged to septic leach fields. Under normal and abnormal operating conditions, BNFL Inc. will discharge all liquid effluents (other than sanitary waste) to permitted Hanford Site facilities.

A concrete batch plant will be operated during construction activities. The maximum expected discharge to the ground on the BNFL Inc. TWRS-P Facility is 10,000 gal/day. This discharge will be in compliance with WAC 173-216 requirements.

c. Water Run-off (including storm water)

1) **Describe the source of run-off (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.**

The Hanford Site receives only 6 to 7 in. of annual precipitation. Precipitation runs off the existing buildings and seeps into the soil on and near the buildings. The precipitation would not come into contact with any of the mixed waste being stored in the facility. Storm water will be managed in accordance with an approved permit.

2) **Could waste materials enter ground or surface waters? If so, generally describe.**

Waste materials will not enter ground or surface waters. All waste materials will be contained in buildings with roofs to prevent contact with storm water.

d. Proposed measures to reduce or control surface, ground, and run-off water impacts, if any:

No surface, ground, or run-off water impacts are expected. Storm water will be collected in an engineered collection pond.

4. Plants

a. Check or circle the types of vegetation found on the site.

__ **deciduous tree: alder, maple, aspen, other**
__ **evergreen tree: fir, cedar, pine, other**
X **shrubs**
X **grass**
__ **pasture**
__ **crop or grain**
__ **wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other**
__ **water plants: water lily, eelgrass, milfoil, other**
X **other types of vegetation**

The most common vegetation community in the vicinity of the BNFL Inc. TWRS-P Facility is the sagebrush/cheat grass or Sandberg's bluegrass.

b. What kind and amount of vegetation will be removed or altered?

Section 4.4 in Volume I of the TWRS EIS (DOE 1996a) describes the vegetation in the vicinity of the BNFL Inc. TWRS-P Facility. Acreage taken by BNFL Inc. activities is inside the portion of the Hanford Site dedicated to long-term waste management. Substantial portions of the 119-acre site previously have been disturbed by clearing, grading, or other activities and are poor-quality habitat. Nevertheless, BNFL Inc.'s clearing and grading will remove/alter shrub-steppe vegetation and habitat.

The supplemental analysis (DOE 1998b) states that 37 acres in the area of the proposed site have previously been disturbed. The TWRS EIS assumes that 62% of the area that would be used for construction and operation for Phase 1 would disturb previously undisturbed shrub-steppe habitat. Based on the current acreage requested (119 acres total for

construction and operations) and the information for Phase 1 in the supplemental analysis (DOE 1998b), it is estimated that 51 acres (119-37=82; 0.62*82=51) of previously undisturbed land will be taken. Plant species likely taken would include big sagebrush and gray rabbit brush, dominant species in the Hanford Site shrub-steppe habitat. While not known to exist on the TWRS-P site, potentially affected species of concern that could be present, according to the TWRS EIS Volume I, Section 4.4.2 (DOE 1996a), include crouching milkvetch, stalk-pod milkvetch, scilla onion, and Piper's daisy.

c. List threatened or endangered species known to be on or near the site.

None. No federally listed threatened or endangered plant or animal species occur on or around the Central Plateau, where the BNFL TWRS-P site is located. Additional information is provided in Volume I of the TWRS EIS, Sections 4.4.4 and 4.4.5 (DOE 1996a).

The Hanford Site contains some federally and state-listed threatened and endangered plant and animal species. Additional information on species can be found in *Hanford Site National Environmental Policy Act (NEPA) Characterization* (PNNL 1997a).

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The DOE has committed to compensate for biological and natural resource disturbance caused by construction activities of BNFL Inc. at an appropriate site to be determined by the DOE. Furthermore, due to the possibility of redisturbance for future work, reseeding of construction lay down areas and other portions of the Phase IB site will use standard Washington State Department of Transportation seed mix. Land used only for construction purposes will be returned to its original

condition and returned to DOE for revegetation. Additional information is provided in Volume I of the TWRS EIS, Section 5.20 (DOE 1996a), and the mitigation action plan for Phase I privatization facilities (DOE-RL 1998).

5. Animals

a. Indicate (by underlining) any birds and animals which have been observed on or near the site or are known to be on or near the site.

The following (as indicated by underlining) have been observed on or near the site or are known to be on or near the site:

birds:	hawk, heron, eagle, songbirds, **other**
mammals:	**deer**, bear, elk, beaver, **other**
fish:	bass, salmon, trout, herring, shellfish, other

Raptors (i.e., burrowing owls, ferruginous, redtail, and Swainson's hawks) are seen occasionally in the 200 East Area. Small passerines (i.e., sparrows, finches) also are present in the general vicinity of the BNFL Inc. TWRS-P Facility. Two Washington State Candidate bird species were observed in the vicinity during the performance of a biological review of the proposed location of the BNFL Inc. TWRS-P Facility: the loggerhead shrike (*Lanius ludovicianus*) and the sage sparrow (*Amphispiza belli*) (PNNL 1998a). Mule deer, rabbits, badgers, and coyotes occasionally are seen in the general area. Additional information is provided in Volume I of the TWRS EIS, Sections 4.4.3 and 4.4.5 (DOE 1996a).

b. List any threatened or endangered species known to be on or near the site.

Two federally and state-listed threatened or endangered species have been identified on the 560 mi^2 Hanford Site along the Columbia River: the

bald eagle and peregrine falcon. In addition, the state-listed white pelican, sandhill crane, and ferruginous hawk also occur on or migrate through the Hanford Site. Of these five species, only the ferruginous hawk is likely to use the upland shrub-steppe habitat of the 200 Areas. Although ferruginous hawks have been seen in the general area on occasion, these hawks have not been observed to use the habitat in the vicinity of the BNFL Inc. TWRS-P Facility for perching, hunting, or nesting. Additional information is provided in Volume I of the TWRS EIS, Section 4.4.5 (DOE 1996a). The sage sparrow (*Amphispiza belli*) and the loggerhead shrike (*Lanius ludovicianus*), two Washington State Candidate bird species, were observed in the vicinity of the proposed location of the BNFL Inc. TWRS-P Facility.

c. **Is the site part of a migration route? If so, explain.**

The Hanford Site is a part of the broad Pacific Flyway.

d. **Proposed measures to preserve or enhance wildlife, if any:**

Specific measures to preserve or enhance wildlife are discussed in Section 5.20 of Volume I of the TWRS EIS (DOE 1996a) and the mitigation action plan for Phase I privatization facilities (DOE-RL 1998b) for mitigation measures.

6. **Energy and Natural Resources**

a. **What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.**

Electrical energy and oil or natural gas energy will be used for heating and to support operation of the treatment facility.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Standard recycling, conservation, and other engineering features will be used to limit the amount of energy used in the facility. Systems will be operated to use energy and resources in the most efficient manner possible.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Possible environmental health hazards to workers could arise from activities at the BNFL Inc. TWRS-P Facility. The hazard could come from exposure to radioactive, dangerous, or mixed waste. Stringent engineered barriers and administrative controls are employed to minimize the probability of even a minor incident and/or accident. A chemical spill, release, fire, or explosion could occur only as a result of a simultaneous breakdown in multiple barriers or a catastrophic natural forces event.

1) Describe special emergency services that might be required.

Hanford Site security, fire response, and ambulance services are on call at all times in the event of an onsite emergency. Hanford Site emergency services personnel are

specially trained to manage a variety of circumstances involving chemical and/or mixed waste constituents and situations.

2) **Proposed measures to reduce or control environmental health hazards, if any:**

All personnel will be trained to follow proper procedures during the BNFL Inc. TWRS-P Facility treatment and storage operations to minimize potential exposure. The BNFL Inc. TWRS-P Facility will have systems for air emission controls, radiation monitoring, fire protection, and alarm capability. The ventilation system will maintain a negative air pressure.

The BNFL Inc. TWRS-P Facility will have measures in place to reduce or control environmental health hazards. These measures will include containment structures and equipment, protective equipment and clothing, and operating procedures to ensure hazards are minimized. The physical security of a chain-link fence around the 200 East Area and limitation of access to authorized personnel will further reduce potential exposures.

b. Noise

1) **What type of noise exists in the area which may affect your project (for example: traffic, equipment, operation, other)?**

During construction, noise impacts would largely result from noise generated by mechanized equipment such as loaders, bulldozers, cranes, and trucks. Noise emission levels from all mechanized equipment used during construction activities will be within the General Services Administration construction noise specifications or other similar noise

standards (DOE 1996a). Because the waste treatment process equipment will be operating inside enclosed structures, exterior noise levels would not be substantially increased due to the BNFL Inc. TWRS-P Facility. For additional information, refer to the TWRS EIS (DOE 1996a).

2) **What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.**

Construction noise impacts as discussed above are short-term. Minor amounts of noise from traffic and equipment are expected during day-shift hours during operations.

3) **Proposed measures to reduce or control noise impacts, if any:**

If Occupational Safety and Health Administration noise standards were to be exceeded, appropriate measures to protect workers would be employed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The site to be utilized by the BNFL Inc. TWRS-P Facility consists of disturbed and undisturbed sagebrush. The subject site is adjacent to the 241-AP Tank Farm and generally flat, with a spoils pile near the center. The spoils pile is soil from the construction of the adjacent grout vaults.

b. Has the site been used for agriculture? If so, describe.

No portion of the 200 Areas has been used for agricultural purposes since 1943, if ever.

c. Describe any structures on the site.

There are no structures currently on the site.

d. Will any structures be demolished? If so, what?

No structures are to be demolished.

e. What is the current zoning classification of the site?

The Hanford Site is zoned as an Unclassified Use (U) district by Benton County, Washington.

f. What is the current comprehensive plan designation of the site?

The 1985 Benton County Comprehensive Land Use Plan designates the Hanford Site as the "Hanford Reservation." Under this designation, land on the Hanford Site may be used for "activities nuclear in nature." Non-nuclear activities are authorized "if and when DOE approval for such activities is obtained."

g. If applicable, what is the current shoreline master program designation of the site?

Does not apply.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

The entire Hanford Site was designated a National Environmental Research Park in 1977 for use as an outdoor laboratory for ecological research. However, the 200 Areas, in particular, are located in a previously disturbed industrial area with little or

no environmental significance. There will be an environmental impact to the shrub steppe habitat from construction activities. Mitigation will be performed in accordance with the mitigation action plan (DOE-RL 1998) developed by DOE in accordance with departmental policy. Additional information is provided in Volume I of the TWRS EIS, Section 4.0 (DOE 1996a).

i. Approximately how many people would reside or work in the completed project?

Employment during peak construction will be 2,500 full-time equivalents on-site. About 500 additional personnel (e.g., engineers, designers, managers, and support personnel) will be located in office facilities in the Tri-Cities area. About 100 of these workers located in the Tri-Cities area can be expected to be present at the BNFL Inc. TWRS-P Facility site on a given day. Approximately 500 onsite workers are expected during operations.

j. Approximately how many people would the completed project displace?

None. Refer to Volume I of the TWRS EIS, Section 5.6.1, for additional information (DOE 1996a).

k. Proposed measures to avoid or reduce displacement impacts, if any:

Does not apply.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

Does not apply.

9. **Housing**

a. **Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.**

None. Refer to Volume I of the TWRS EIS, Section 5.6.2, for additional housing information (DOE 1996a).

b. **Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.**

None.

c. **Proposed measures to reduce or control housing impacts, if any:**

Does not apply.

10. **Aesthetics**

a. **What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?**

The BNFL Inc. TWRS-P Facility will consist of a structure with the tallest height of 115 ft. The structure primarily will be composed of concrete. The BNFL Inc. TWRS-P Facility stack height will be approximately 289 ft.

b. **What views in the immediate vicinity would be altered or obstructed?**

None.

c. **Proposed measures to reduce or control aesthetic impacts, if any:**

None. Refer to Volume I of the TWRS EIS, Section 5.20, for additional information (DOE 1996a).

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Lighting will be provided for the proposed site during construction and operations during the day and night.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

None.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

None.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any?

None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

No places or objects listed on or proposed for national, state, or local preservation registers are known to be on or next to the BNFL Inc. TWRS-P Facility. Refer to Volume I of the TWRS EIS, Section 5.5, for additional information (DOE 1996a).

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

There are no known landmarks or evidence of significant historic, archaeological, scientific, or cultural importance at the BNFL Inc. TWRS-P Facility site (PNNL 1998b).

c. Proposed measures to reduce or control impacts, if any:

Does not apply.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Access to the site is via DOE-provided highways and roads. There will be no public access to the BNFL Inc. TWRS-P Facility. Refer to Figure 1 in the BNFL Inc. TWRS-P Facility NOI and the BNFL Inc. TWRS-P Facility topographic map in Appendix A of the BNFL Inc. TWRS-P Facility NOI for information on the proposed access to the site and existing streets.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

The BNFL Inc. TWRS-P Facility will not be accessible to the public and will not be served by public transit. The nearest public transit stop is approximately 20 miles from the BNFL Inc. TWRS-P Facility.

c. How many parking spaces would the completed project have? How many would the project eliminate?

The parking area constructed to provide parking for the BNFL Inc. TWRS-P Facility workers and visitors will have sufficient spaces for approximately 500 onsite workers during operation. Because the proposed site is currently undeveloped, no parking will be eliminated as a result of this project.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Yes. An access road to the BNFL Inc. TWRS-P Facility site will be constructed. The road will be accessible only to authorized personnel.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Refer to the Volume I of the TWRS EIS, Section 5.10, for this information (DOE 1996a).

g. Proposed measures to reduce or control transportation impacts, if any:

None. Refer to Volume I of the TWRS EIS, Section 5.20, for additional information (DOE 1996a).

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No. Refer to Volume I of the TWRS EIS, Section 5.6.3, for additional information (DOE 1996a).

b. Proposed measures to reduce or control direct impacts on public services, if any:

None.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other:

Electricity, potable water, steam, refuse service, telephone, and septic systems are currently not available at the site.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

The DOE will supply water and electricity to the BNFL Inc. TWRS-P Facility. The water will come to the facility from extensions of the 200 Areas sanitary and raw water systems. The water system extensions will proceed east to the BNFL Inc.

TWRS-P Facility from existing pipelines in the vicinity of Canton Street in the 200 East Area.

The electricity will come to the BNFL Inc. TWRS-P Facility from a new substation built by the DOE to support privatization. The substation has a capacity of 40 Megawatts.

Natural gas supply or oil storage may be added as part of the project.

SIGNATURES

The above answers are true and complete to the best of my knowledge. We understand that the lead agency is relying on them to make its decision.

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division
U.S. Department of Energy
Richland Operations Office

12/7/98
Date

Donald W. Edwards, Safety and Regulatory
Programs Manager
BNFL Inc.
Richland, Washington

11/17/98
Date

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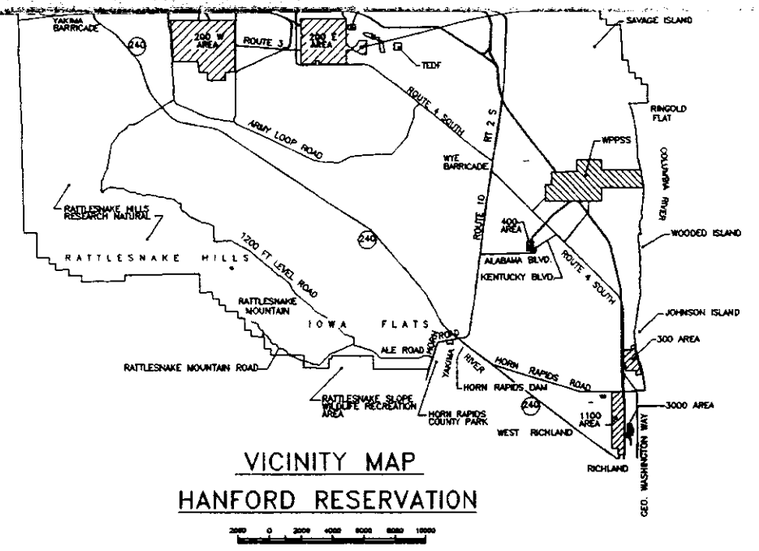


VICINITY MAP
HANFORD RESERVATION

SCALE IN METERS

262.48	0	131.24	262.48	524.96	787.44	1049.92	1312.40	FEET
80	0	40	80	160	240	320	400	METERS

SCALE

FOR INFORMATION ONLY

ISSUED BY TWRS-P PDC Dwd 11/23/98 INIT DATE ISSUE STAMP		PRODUCED VIA CAD DO NOT ALTER MANUALLY SOFTWARE USED:-	
		DRAWN BY	J MILLER
PROJECT No.	W375	CHECKED	
OFFICE/DEPT.	PLANT DESIGN		
SITE	TWRS-P		
DWG TYPE	CIVIL		
BUILDING No.	-		
PLANT AREA	TWRS-P	APPROVED BY	
SYSTEM No.	-	DATE	11/23/98

CONTRACT No: W375

BNFL Inc.

TWRS-P PROJECT
3000 GEORGE WASHINGTON WAY
RICHLAND, WA 99352
UNITED STATES OF AMERICA

TWRS PRIVATIZATION SITE LAYOUT FOR DWPA NOI

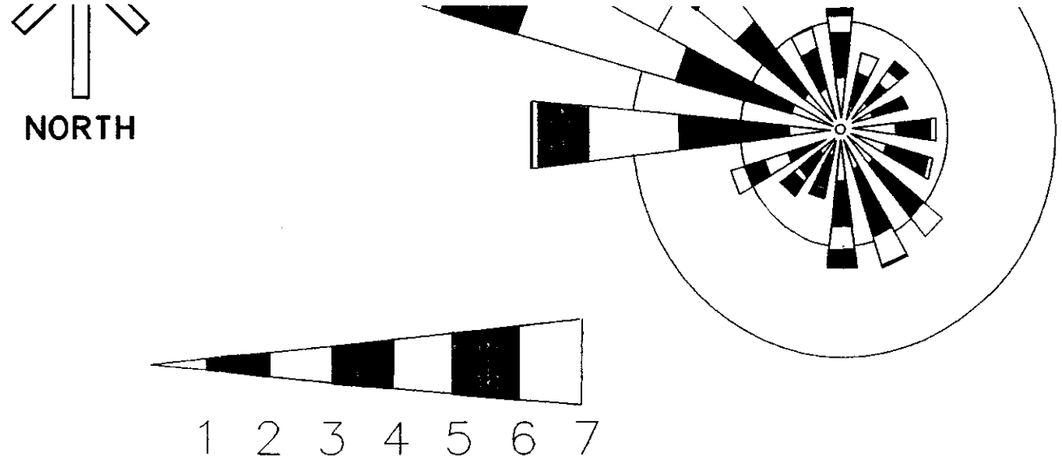
SIZE	DWG No.	REV
E	DWG-W375-C00001	0

SCALE: AS NOTED | CAD FILE: C00001.DWG

COMPUTER GENERATED: NO MANUAL CHANGES ALLOWED

B

A



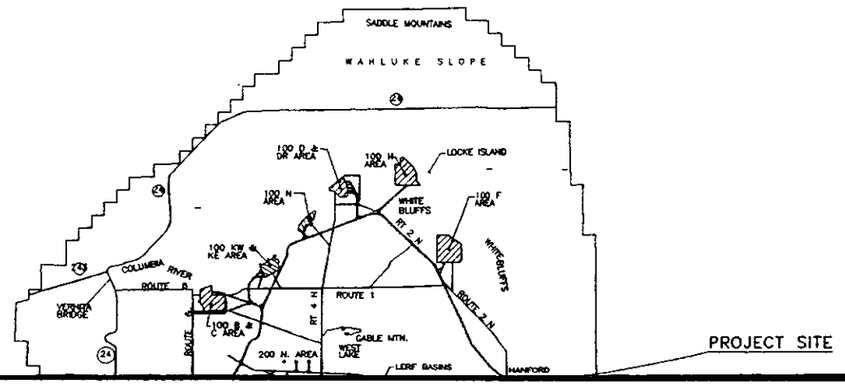
PADDLES INDICATE DIRECTION WIND IS COMING FROM.
RADIAL GRIDS REPRESENT 5.0% AND 10.0% OCCURRENCE.

WIND CLASS	MILES/HOUR
1	>1.0 – 3.0
2	4.0 – 7.0
3	8.0 – 12.0
4	13.0 – 18–0
5	19.0 – 24.0
6	25.0 – 31.0
7	32.0 +

WIND ROSE

LEGEND:

- TRANSFER FEED LINE CORRIDOR
- ELECTRIC SUBSTATION
- PROPOSED ADDITIONAL PERMANENT SITE AREA
- TEMPORARY CONSTRUCTION (64 ACRES)
- PROPOSED ROAD
- E 576700 — WASHINGTON STATE GRID SYSTEM COORDINATE IN METERS
- DOE GROUND MONITORING WELL

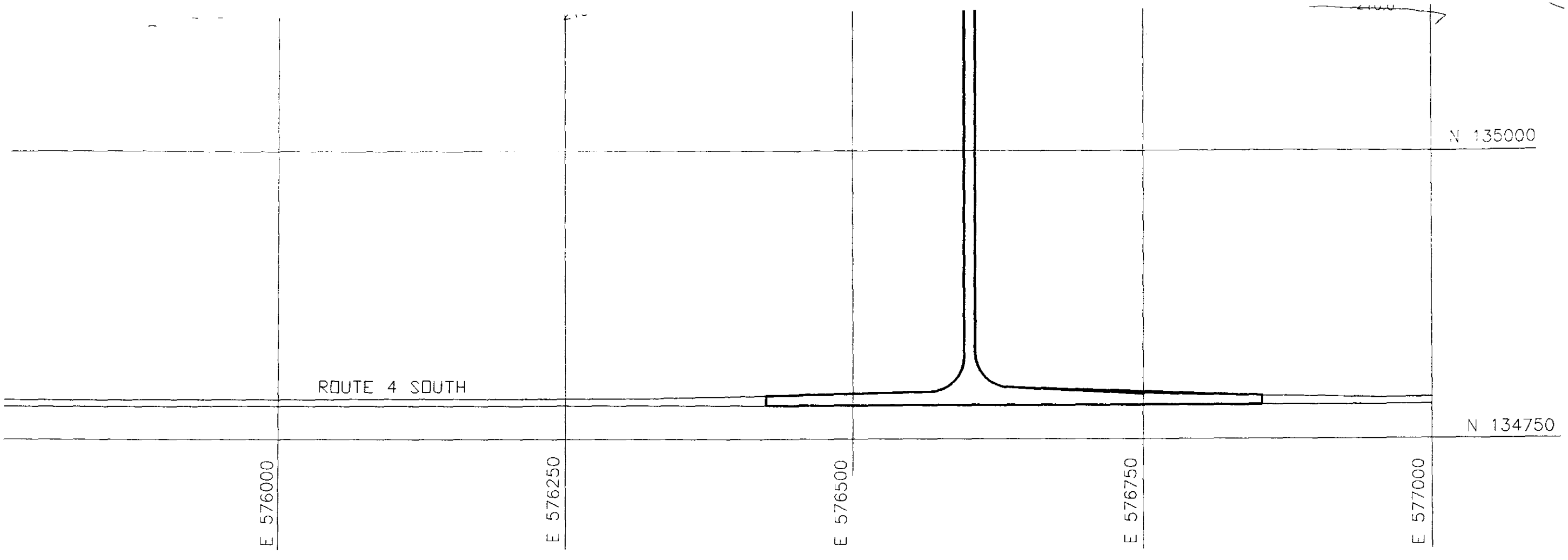


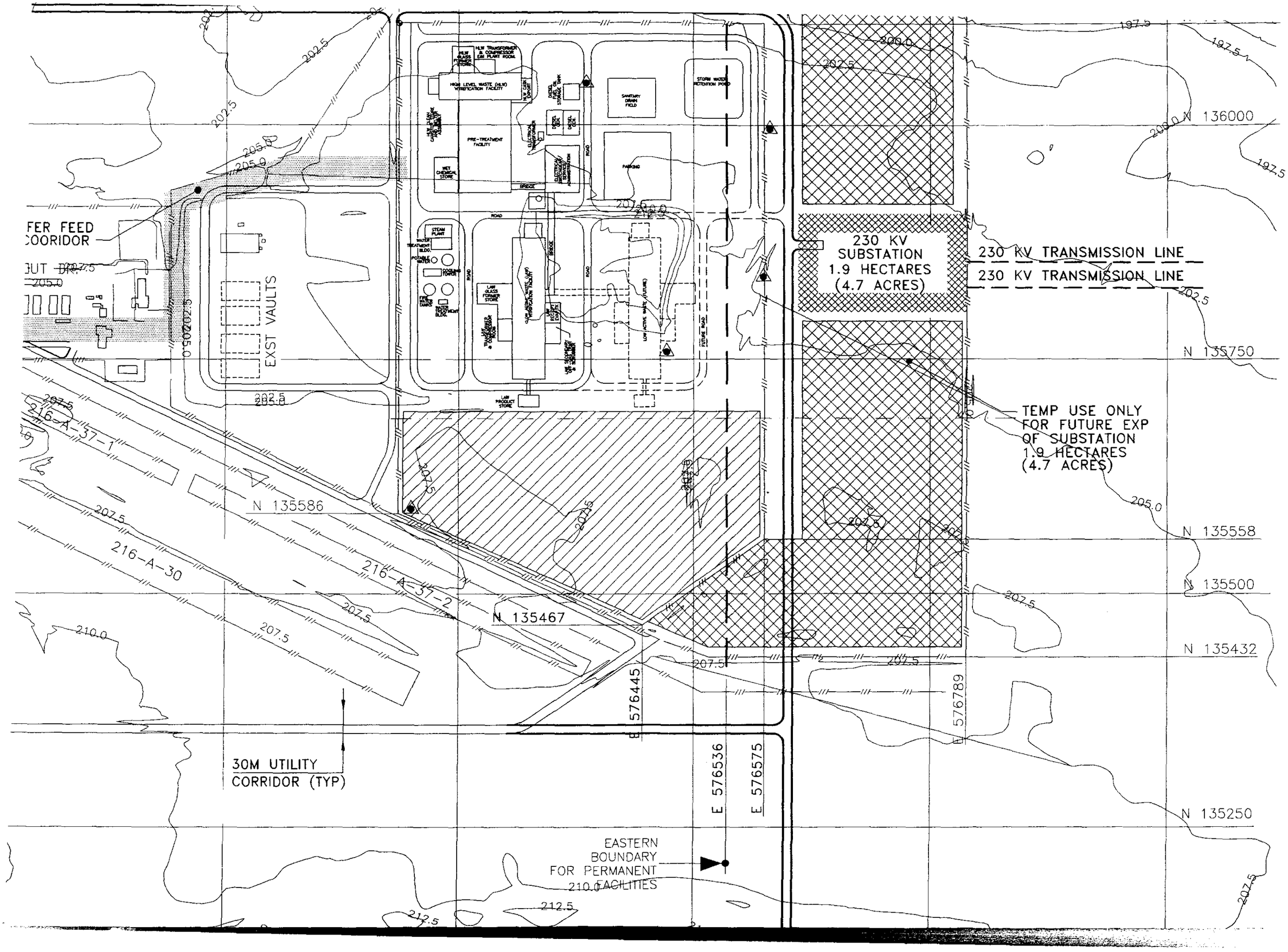
3 | 2 | 1

REVISION HISTORY

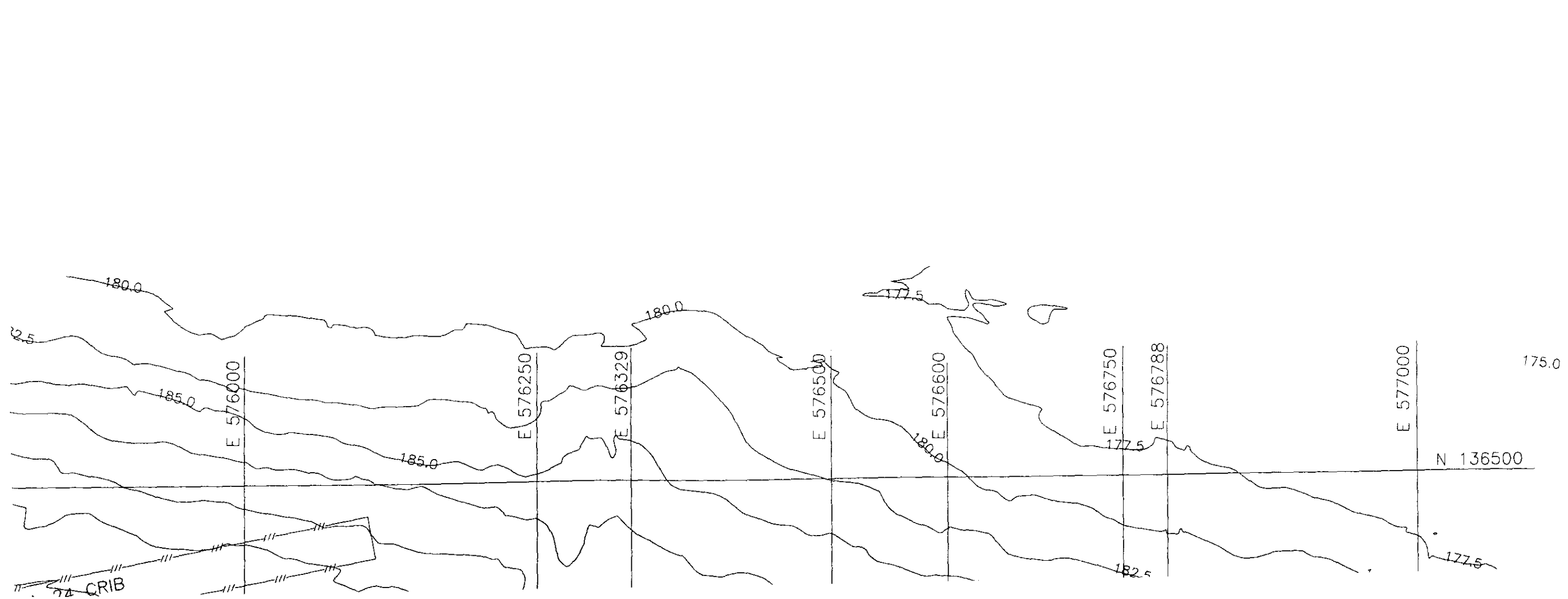
REV	DESCRIPTION	DRAWN	CHKD	APVD	DATE
0	ISSUED FOR NOI	JRM	JKB	RJB	11/23/98

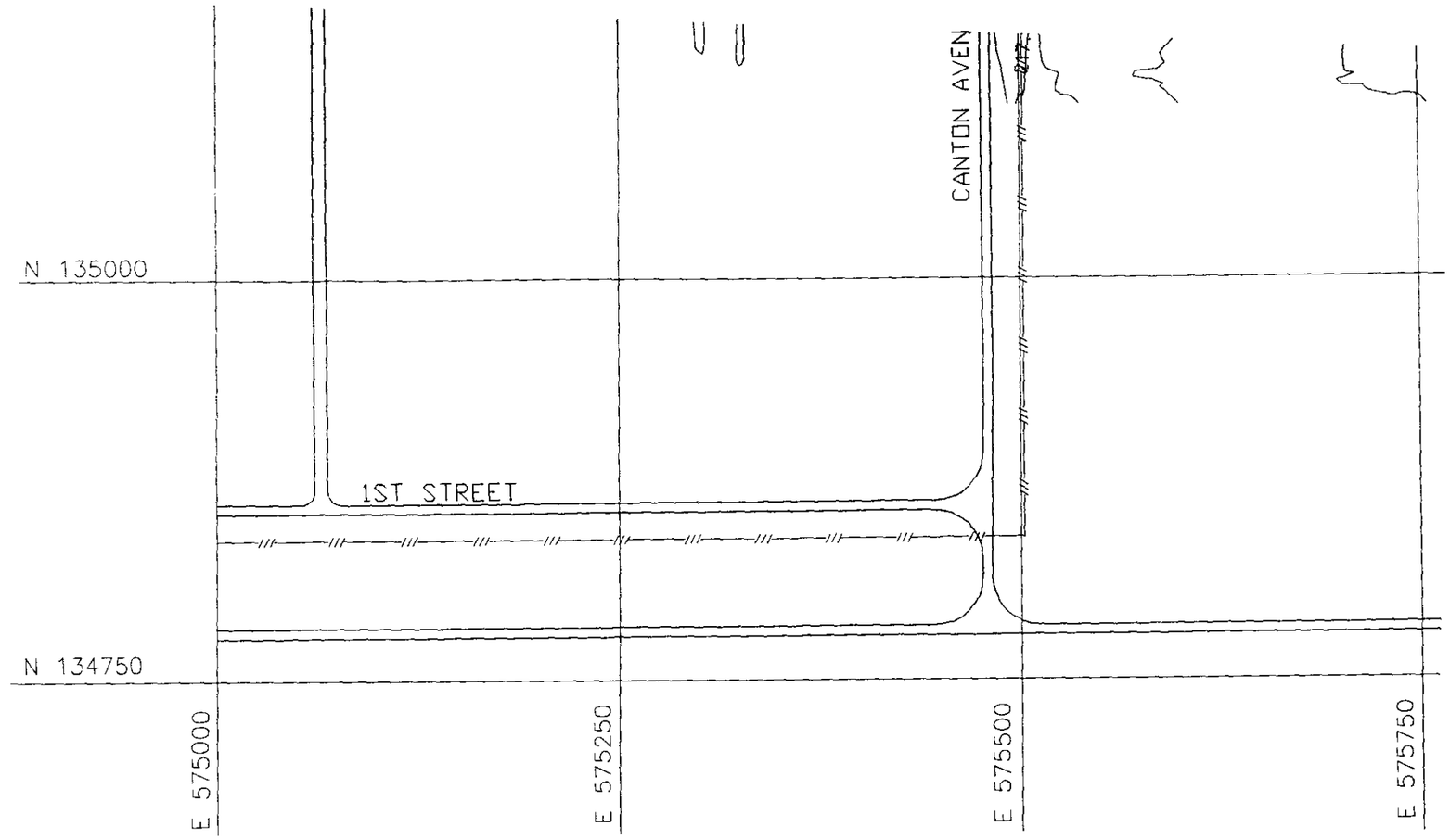
F


N 135000
ROUTE 4 SOUTH
N 134750
E 576000
E 576250
E 576500
E 576750
E 577000

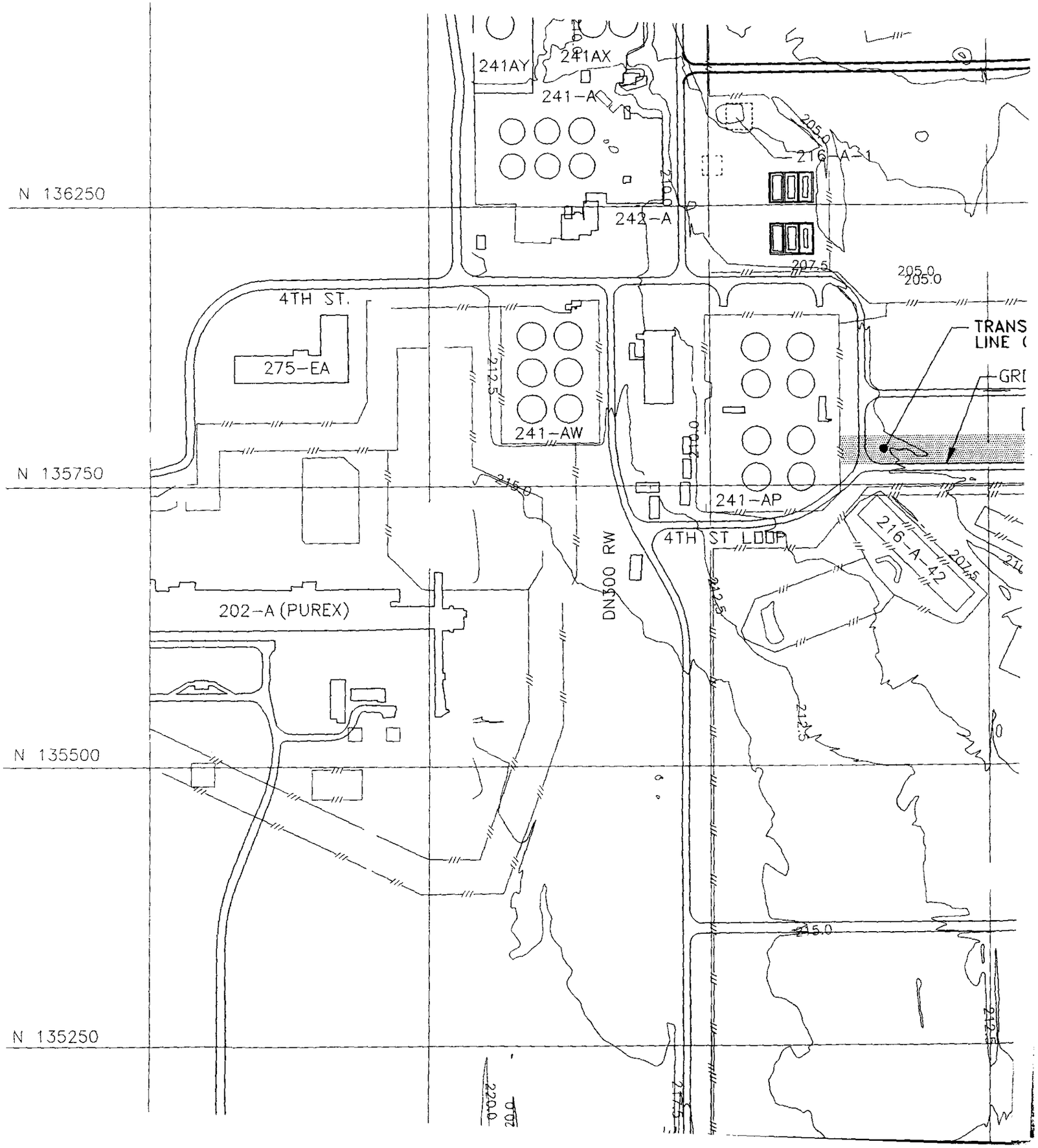

HLW TRANSFORMER & COMPRESSOR EAST PLANT ROOM
HLW GLASS FORMER STORE
HIGH LEVEL WASTE (HLW) VITRIFICATION FACILITY
HLW CLEAN DRAIN
DIESEL FUEL STORAGE TANK
DIESEL GEN.
DIESEL GEN.
SANITARY DRAIN FIELD
STORM WATER RETENTION POND
PRE-TREATMENT FACILITY
ELECTRICAL TRANSFORMER
ELECTRICAL SWITCHGEAR SUBSTATION ADMINISTRATION
ROAD
PARKING
WET CHEMICAL STORE
BRIDGE
ROAD
STEAM PLANT
WATER TREATMENT BLDG.
POTABLE WATER
COOLING TOWER
FIRE WATER TANK
WATER TREATMENT BLDG.
ROAD
LAW GLASS FORMER STORE
TRANSFORMER & COMPRESSOR EAST PLANT ROOM
LAW VITRIFICATION FACILITY
LAW RECYCLE TANK
LAW SECONDARY WASTE SYSTEM
BRIDGE
ROAD
LOW ACTIVE WASTE (FUTURE)
FUTURE ROAD
LAW PRODUCT STORE
FER FEED
COORIDOR
EXST VAULTS
202.5
205.0
207.5
210.0
212.5
197.5
200.0
216-A-37-1
216-A-30
216-A-37-2
N 135586
N 135467
230 KV SUBSTATION 1.9 HECTARES (4.7 ACRES)
230 KV TRANSMISSION LINE
230 KV TRANSMISSION LINE
TEMP USE ONLY FOR FUTURE EXP OF SUBSTATION 1.9 HECTARES (4.7 ACRES)
N 136000
N 135750
N 135558
N 135500
N 135432
N 135250
E 576445
E 576536
E 576575
E 576789
30M UTILITY CORRIDOR (TYP)
EASTERN BOUNDARY FOR PERMANENT FACILITIES

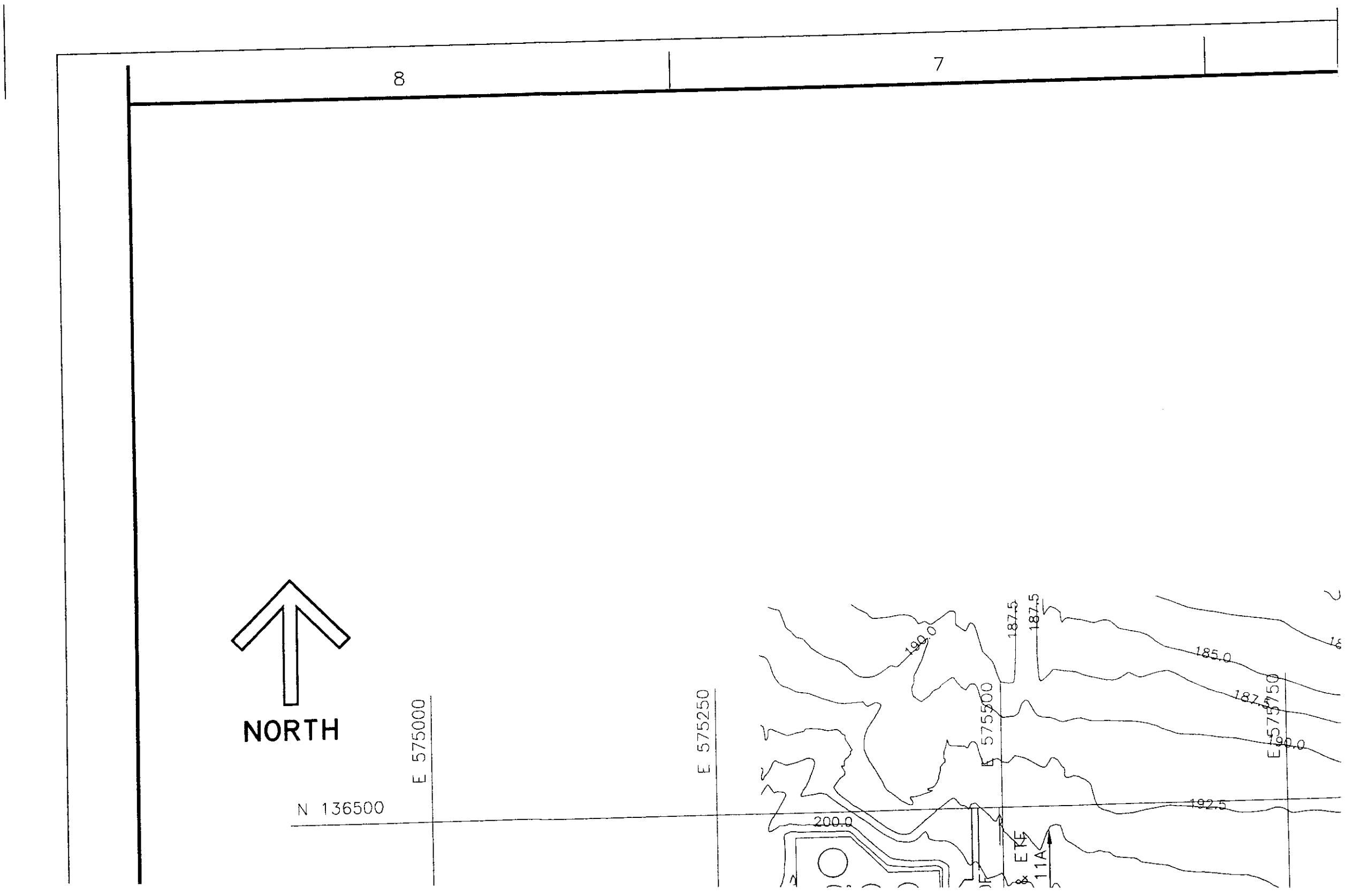
6 5 4


180.0
185.0
185.0
180.0
177.5
180.0
177.5
182.5
177.5
175.0
E 576000
E 576250
E 576329
E 576500
E 576600
E 576750
E 576788
E 577000
N 136500
CRIB



FORM DTITLE.DWG MONDAY NOVEMBER 9, 1998


241AY
241AX
241-A
216-A-1
N 136250
242-A
4TH ST.
275-EA
212.5
241-AW
N 135750
241-AP
4TH ST LOOP
216-A-42
202-A (PUREX)
DN300 RW
N 135500
N 135250


8
7
NORTH
E 575000
E 575250
N 136500
190.0
187.5
187.5
185.0
187.5
190.0
192.5
200.0
E 575500
E 575750
E K E
11A